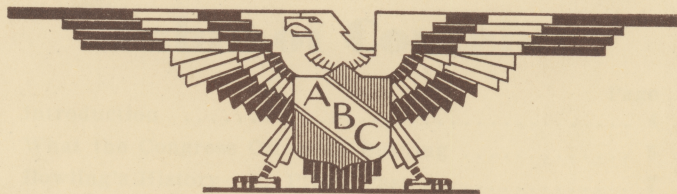


American Bowling Congress



Bowler's Manual

*"He who will make a wise
use of any part of his life
must allot a goodly portion
of it to recreation."*

CORVALLIS BOWLING GARDENS

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Corvallis, Oregon

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INTRODUCTION

IN presenting this Bowlers' Manual and short history of Bowling, the American Bowling Congress takes cognizance of the almost universal need and request for this addition to its services.

It is the earnest hope of the Congress that this manual, published for bowlers without cost to them, will be thoroughly read and will be realized as being one of the many factors contributing to the amazing growth of the Congress, and to its value.

Establishing of a service is, in many instances, looked upon as a mere gesture; but the maintenance of that service to the satisfaction of those who are to be served can be attained only by the wise and careful administration of all matters pertaining to it.

The services of the American Bowling Congress are available to its entire membership — some 700,000 bowlers in the United States, Canada, Hawaii, Alaska and China.

What the Congress Offers to Bowling

IN order that you may better understand the structure of the American Bowling Congress and more readily appreciate the ideals upon which it is founded and the ambition toward which it is directed, we here set forth some of the more important benefits to be derived from affiliation with the Congress.

Established to promote bowling, to improve bowling conditions, to educate its membership in bowling procedure, rules, etiquette and in sportsmanship, the American Bowling Congress offers, among many others, these primary advantages:

The certification of all playing equipment, effected through annual inspection by officials of affiliated city associations, with uniform standards established by the Congress.

The provision, adoption and enforcement of uniform laws, rules, bowlers' qualifications and methods of playing the game of American tenpins, through the supervision and control over all bowling associations, sanctioned leagues, tournaments and bowling establishments.

The representation of affiliated associations through duly authorized and elected delegates at the annual convention of the Congress where all laws, rules and regulations governing the tenpin game are enacted or amended by the delegates.

The administration of official, legislative and judicial matters, planning and research in statistical, technical and historical departments; the attention given to tens of thousands of pieces of mail matter; the issuance of more than 100,000 team membership cards, 12,000 league sanction certificates and 4,000 bowling alley certificates.

The Congress conducts an annual World's Championships Bowling

Tournament which has become recognized as the greatest single event in the annals of sport. So huge and important is this tournament, with its attendant publicity, that the idea often prevails that this event is the most important function of the Congress, when, in reality, only 3½ per cent to 5 per cent of its membership participates in the American Bowling Congress Tournament. This means an average of about 25,000 bowlers have participated in late tournaments. With such an impressive undertaking as is an American Bowling Congress Tournament, its efficient management, and the equitable distribution of prize money, it is only natural that the tournament has proved to be such a great attraction.

A most convincing illustration, showing that the ideals and policies of the Congress are being carried out continually, is the fact that among some fifty or more elected officers and executive committeemen, there are but two who receive salaries. All but these two serve without remuneration solely because of their keen interest and love for the sport. These men are selected from the ranks of the bowlers and are enlisted from all walks of life.

The income of the Congress, derived from dues, is spent entirely on its work, and the financial state of the Congress is submitted in a detailed report to the membership at the annual convention.

An important service rendered our membership is the protection of prize funds of sanctioned leagues through the bonding of league treasurers, without cost to the bowlers. During the period this service has been in effect, many leagues which, through defalcation of their treasurers, otherwise would have been caused severe disappointment at the conclusion of their schedules, have been fully recompensed.

The Congress insists that financial statements of all sanctioned

tournaments be submitted to the Congress office. These reports are closely examined to make certain the participants in these tournaments have received a just return in prize money, that no excessive sums have been used for expenses, and that no individual or group promoted a tournament for his or their particular gain.

The Congress presents to bowlers and teams in sanctioned leagues and tournaments gold, silver and bronze awards, for perfect games (300) and games of 299 and 298, respectively, and also offers the same awards for highest team series, single team game and individual high series during each season. The gold and silver awards offer a choice among rings, belt buckles and medals. The bronze awards are belt buckles or medals.

Through their secretaries, all sanctioned leagues receive a subscription to the American Bowling Congress Bulletin, the only official publication of the American Bowling Congress. This magazine, published semi-monthly during nine months of the year, is also available to the membership at the rate of 50 cents

per year. The American Bowling Congress Bulletin in itself reflects the services of the Congress, disseminates unusual and interesting activities of the bowling world, furthers education in bowling laws, rules and regulations, prints the results of investigations and research, and tends toward a harmonious co-operation and coordination of all bowling interests.

The Congress furnishes schedule codes for leagues consisting of from four to thirty-two teams, rule books, average calculators, literature pertaining to proper league organization and conduction, and various official certificates of approval.

City associations, through their secretaries, are supplied with gauges to aid in their inspection of bowling alleys and are given work sheets and full instructions for the accomplishment of their duties.

The Congress, through a representative in the field, is able to establish a personal contact with its affiliated associations, promoting clarification of rules, opening new territories and, in general, bringing about a closer relationship among its members.



Bowling's History— Its Proud Past

AUTHORITIES are practically united in the opinion that the game of bowling originated in northern Italy 1000 to 1500 years ago.

E. H. Baumgarten, secretary of the American Bowling Congress, who has devoted years to the search for the birthplace of the sport, and who has, to a great degree, been successful in determining when the games of pin bowling came into vogue and were separated from what is known as "Lawn Bowls" or "Bowling on the Green," casts a vote for present-day northern Italy, and further advises:

"From earliest times, in every civilized country of Europe, the game has been played in one form or another. As far back as the twelfth century 'bowles' was a popular game in England. Strutt, in his 'Sports and Pastimes in England,' says:

"The pastime of bowling, whether practiced on open greens or in bowling alleys, was probably an innovation of the Middle Ages (400-1500 A. D.). During that period bowling was played on greens and under covered sheds, and finally upon bowling alleys indoors."

Spherical Stones for Balls

"The original bowls (or balls of the game of bowls) were stone boulders, and were as near spherical in formation as could be obtained. Hence, stones not being perfect spheres, the explanation of the bias, or curve, that the balls take in the lawn game of bowls."

The nine-pin game was undoubtedly of Dutch creation. It was a favorite pastime in Holland. The French played *carreau*, a primitive form of bowling, long before the reign of Charlemagne. Curling, which is an adaptation of the ancient game of bowls, was introduced into Scotland by the Flemish immigrants in the 16th century.

Among the other games analogous to "bowles" which were practiced in early times, were *kayless* (also spelled *cayles*, and *keiles*, French quilles, a game played with pins); *shovelboard* (since corrupted into *shuffleboard*), *cloish*, *closh*, or *clossygne*, (played with nine-pins) and *skittles*. While some of these games were played with pins, others were played with cone-shaped objects as "jacks."

Although all these games had their part in the development of the modern game, it is probable that the one to which the sport of today is most closely allied is the ancient game of nine-pins. This game, originally played by the Germans, Dutch and Swiss, was bowled upon beds of clay or cinders.

Later, about 1200 A. D., a single board, 12 to 18 inches wide, was used as the alley bed, and the pins were set up, three pins in each of the three rows, on a board platform from 36 to 48 inches square. It was naturally impossible to hit any of the corner pins so the pins were re-spotted after each ball.

Ninepins Introduced in America by Dutch

This game, originally brought to America by the Dutch, was first introduced by members of that hardy race on Manhattan in 1623. The earliest settlements of the Dutch were on the banks of the Hudson River, in the Catskill Mountain region, and in what is now known as New York City.

Nine-pins enjoyed popularity for a great many years, the pins being set in a diamond shape. According to the old-timers, the game of nine-pins became the rage of sporting men, and gradually fell into the control of gamblers. Matches for money were made and eventually proved the game's undoing.

So openly had this bad feature seized upon the devotees of the game

in New Haven and Hartford that the sport was classed as gambling and the Connecticut legislature passed an act prohibiting the game of nine-pins. It continued in New York and Massachusetts for some time and then was prohibited in these states also.

Tenpin Game Created to Evade Law

To circumvent the law which prohibited the game of nine-pins, but not the game of bowling, cocked hat, which called for fewer pins, was substituted. This state of affairs continued for quite a while, when some genius hit upon the idea of adding another pin to the nine-pin set, creating a ten-pin combination with pins set in triangular formation, thus circumventing the law pertaining to nine-pins.

The game of tenpins, thus brought into being, now is practically universally played by millions of men and women, not only in the United States and Canada, but in other countries as well, all of whom have adopted the American Bowling Congress regulations pertaining to tenpins as a standard.

First Uniform Specifications and Rules Adopted

No real effort to set up a uniform code of specifications or playing rules for playing the game of American tenpins was made until 1875, when the National Bowling Association was formed in New York. As a result of this body's action, a foul line was established, dead wood was removed from the alleys, and the 60-foot measurement from the foul line to the center of the head pin spot was adopted. Even though this body had progressive ideas, it apparently was too limited in scope, and disintegrated in a few years.

In 1890, the American Amateur Bowling Union was organized, but owing to the lack of initiative and foresight, it also failed to function.

A. B. C. Organized

No other attempt at organization was made until 1895, when, after several meetings of the best minds in bowling circles, the American Bowling Congress was created, on September 9th, for the purpose of promoting and elevating the game, adopting a uniform set of playing rules and regulations, and establish-

ing uniform specifications for the building of bowling alleys, as well as equipment pertaining thereto. It took upon itself the task of controlling and supervising the game wherever played in North America.

As a result of the wisdom, foresight and practical judgment of the founders, and by strict application of the principles of its constitution and by-laws through executives of proven business ability and true sportsmanship, we find ourselves heir to the most popular and fascinating sport in which the masses participate. Bowling has today a governing body in the American Bowling Congress, and the game probably is the best organized of all sports.

Conducts Worlds Largest Sports Event

The Congress conducts an annual World's Championships Tournament, recognized as the greatest of all sports events, from the standpoint of participants, its financial prize list and duration. This tournament attracts more than 25,000 actual participants each year from more than 600 cities in the United States and Canada, the total prize list to the winners aggregating close to \$200,000 at each annual tournament.

At Chicago, in 1901, the American Bowling Congress conducted its first national championship tournament. The entries for the tournament consisted of 41 five-man teams, 78 doubles, and 115 individuals.

Each year the American Bowling Congress arranges, in the Tournament city, to lease and rent the largest building available and suitable for the purpose of staging this great sport event. As many as 40 new alleys have been installed especially for the tourney. A set of new pins is provided for each five-man team entered. All equipment is leased by the Congress for the duration of the tournament. Every bowling ball used by the participants must be officially weighed and inspected for size, weight and balance before the bowler may carry his ball through the paddock. It is impossible for a bowler to use a ball in the American Bowling Congress Tournament, which has not been weighed and inspected.

Succeeding the selection of the American Bowling Congress Tournament City for 1941, the newly adapted rota-plan is effective for seven years. This definitely assures the

bowlers in the Eastern, Central, Mississippi and Western Sections of the United States that the stellar event of the American Bowling Congress for this period will be conducted in these areas at intervals as set up under the rota-plan.

Etiquette In Bowling

ETIQUETTE and sportsmanship go hand in hand in all forms of sport. In the game of tenpins a code of etiquette has been established and has been accepted by bowlers everywhere. Few of its rules are official, but respect for these "unwritten laws" give consideration at all times to the rights of the other bowler. Here are some rules worthy of study and application:

The beginner should be helped, not ridiculed. Many a prospective bowler has been laughed out of the sport.

Proper equipment is a prime requisite in all sports. A good pair of bowling shoes will outlast many pairs of dress shoes and cost much less. Consideration should be given the fact that stiff soles do not permit the foot muscles to function properly when bowling, nor can the proper purchase be obtained. Leather heels, especially, will also deface and scar the approaches, while rubber heels often prevent bowlers from sliding properly. Chalk should never be used on bowling shoes. It causes the leather to crack and leaves the approaches in a bad condition.

Never attempt to remedy either a sticky or a slick approach condition by the use of chalk or any powder. This can greatly inconvenience the bowler who follows you, who may be wearing bowling shoes. The management provides steel wool for the purpose of cleaning the approaches. Call his attention to any faulty condition of the approaches.

Do not use a ball which is the private property of someone else unless given express permission to do so by the owner. If the owner does permit you to use his ball, refrain from using chalk, resin, aristol, or any other substance on your hand.

When any two bowlers, bearing corresponding positions in the line up of opposing teams, shall prepare to bowl (bowling corresponding frames on adjoining alleys), it shall be incumbent upon the bowler on

the right to bowl first. In the event the pins are not yet set up for the bowler on the right, it shall be the duty of the bowler on the left to wait until his opponent's pins are properly set. (Rule 13, American Bowling Congress Rules governing conduct of teams, leagues, etc.).

Be at your post on the approach, ready to bowl, when your turn comes. Watch the bowler to your right, he has the right of way, if he is ready to deliver his ball. Never, under any circumstances, deliver your ball simultaneously with the bowler on either your right or left. You may know bowling etiquette, but the bowler on your left may not.

Do not bend over and pick your ball off the rack just as a bowler on the other side is ready to start his delivery or is in the process of delivering his ball.

Having taken your stance, concentrate on your delivery. Ignore any remarks which may be made while you are preparing to bowl.

When a bowler has finished his delivery and has noted his hit, he should turn and walk directly back toward the rear of the runway being careful to remain on his own approach. Do not stand at the line long after the pins have stopped falling, attracting attention, causing any unfavorable comment and interfering with the man on a neighboring approach.

Do not speak or make any remarks to a bowler after he has taken his stance or while he is in the act of delivery. This is a cardinal violation of the bowlers' code.

Should you believe an incorrect foul to have been called on you, do not stand at the foul line and argue with the foul line judge. Call the matter to the attention of the captains of both teams involved in the match. Remember the foul judge is in a much better position to note any violations of the foul rule than the bowler himself, and there is no intention on the part of the judge to penalize a player unjustly.

Be punctual when scheduled to bowl, whether it is in league, tournaments or special matches. Nothing upsets a team more than being caused to wait for a tardy member. Should you be unavoidably detained, or know in advance that you will not be able to appear on time, notify your team captain or any other member of your team.

Become familiar with the rules of the game. Learn how to score. Attend all meetings of your league or association.

Simple Instructions for Scoring Tenpins

A GAME of tenpins shall consist of 10 frames.

Each player shall bowl two balls in every frame, except when he shall make a strike. Exception: If a strike is made in the tenth frame, two more balls shall be bowled. A strike marked thus (X) in the upper right corner of the frame on the score sheet, is made when the player bowls down all the pins with the first ball delivered. No second ball is then bowled. A spare, marked thus (/) is made when the player bowls down all the pins upon delivering two balls, and when made in the tenth frame, permits another ball to be bowled.

After making a strike, the player is credited with 10 pins plus all the pins made on the next two balls delivered. In the event a second strike is made, mark another (X), but place no figures in either of the two frames (the reason for this being that since a strike counts 10 pins plus what pins are scored on the next two balls, no figures can be marked until two balls shall be rolled following the strike). Two strikes in succession entitle the player to 20 pins in the frame in which the first strike was made plus the number of pins bowled down on the first ball delivered in the following or third frame. Should a third successive strike be made, the player is credited with 30 pins in the frame in which the first strike was bowled, while in the second frame he would be credited with 20 plus the number of pins bowled down on the first ball delivered in the fourth frame. After making a spare (/), the player is credited with

1st Ball	8	10	7	10	10	9	7	6	10	10
2nd Ball	20	39	48	77	97	114	130	139	169	199
	2	0	2	0	0	1	3	3	0	10 10

10 pins plus pins bowled down on the next (first) ball in the following frame.

When neither a strike nor a spare is made, add those pins knocked down to the total in the previous frame.

Dimensions and Specifications

BOWLING alleys and approaches upon which the game of Tenpins shall be played, must be constructed of wood.

The regulation length of the bowling alley bed, exclusive of the approach, is 63 feet.

The distance from the center of the No. 1 or head pin spot to, and including the foul line, shall be 60 feet, with a tolerance of one-half inch either way permitted.

Back of the foul line there shall be a clear and level runway of not less than 15 feet in length.

The pin spots are placed 12 inches apart, from center to center.

The centers of the seven, eight, nine and 10 pin spots must be three inches from the end of the bowling alley bed proper.

The pins are placed in the formation shown below.

7*	8*	9*	10*
	4*	5*	6*
	2*	3*	
		1*	

The gutters shall be nine inches wide on alleys which are 42 inches in width and nine and one-half inches on alleys which are 41 inches wide.

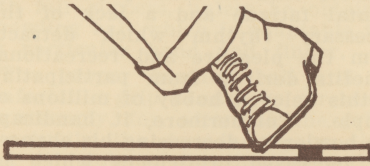
The distance between kickbacks cannot be less than 60 inches. Distance between fibre plates, when attached, must not be less than 59 $\frac{3}{4}$ inches.

The pit at the rear of the alleys shall, at no time, be less than nine and one-half inches in depth, measuring from the top of the pit mat to the surface of the alley bed.

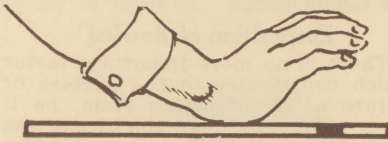
Pins: A regulation tenpin is 15 inches high and its diameter at the base is two and one-fourth inches. Regulation tenpins are made of clear, hard maple. A regulation tenpin must not weigh less than three pounds, nor more than three pounds, eight ounces.

Bowling Balls: A regulation bowling ball may not, in any case, exceed

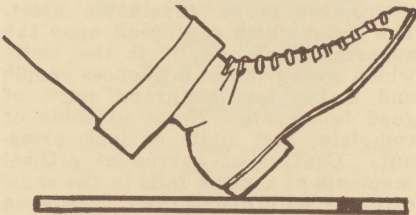
27 inches in circumference, nor exceed 16 pounds in weight. It is permissible to use lighter weight balls, and balls smaller in circumference for the game of tenpins but not advisable.



A foul is committed when the bowler permits any part of his foot,



hand or arm to rest on, over, or extend beyond the foul line while



The above illustrations are classified as three different types of fouls, for the foot or hand rests on the runway and extends over beyond the foul line.

any portion of that foot, hand or arm is in contact with the alleys or

the runways back of the alleys. If, at any time during the delivery of the ball, the player permits any part of his person to come in contact with the alleys, the foul line, the division boards, walls or up-rights, which are on a line with or beyond the foul line, a foul has been committed, providing it is a real delivery and the ball leaves the player's hand.

The foul line, besides being imbedded or painted on the bowling alley bed proper, should be painted or imbedded on any wall, post or other portion of the bowling alley within the reach of a player as he has completed the delivery of the ball, and by which wall or post he might support himself to prevent falling. This vertical line should be on a line and conform with the exact location of the regular foul line.

A ball is considered in play, and a foul may be legally called on a player at any time prior to the recording and acceptance of the score on the score board. This will prevent argument as to when a bowler has the right to step over the foul line after delivering the ball.

No count is made on a foul ball and any pins which may have been knocked down or misplaced thereby shall be respotted at once, and where the foul has been called on the first ball delivered, the player shall be permitted to bowl his second ball against a full set up of pins. A foul ball shall count as a ball bowled by the player.

Fundamentals and Finer Points of Bowling

PROPER instruction, thought and practice are very essential if a bowler wishes to improve his proficiency.

This introduction precedes instructions pertaining to the fundamentals and technique employed in bowling tenpins, designed to be of aid to the novice who is anxious to learn to bowl; to furnish helpful hints to the medium-average bowlers desirous of improvement; and to furnish food for thought to the expert who seeks to perfect his game.

An Old Sport

Bowling, as a recreational sport, has existed for centuries in forms varying to meet the demands and need for improvement. Spherical

stones were used during the middle ages in bowling on the green. By contrast we now have the perfect hard rubber composition ball and bowling alleys uniform in dimension and as perfect as human skill can make them. The most outstanding of these betterments have been accomplished in the last generation—brought about by the allegiance of a huge membership which through sheer numbers and loyal support, has given the American Bowling Congress power to enforce regulations for the upbuilding and improvement of the game.

Tenpins prospered as a consequence of improved equipment and the gradual elimination of the type of surroundings which had for long retarded its growth.

Steady Increase

The game has steadily increased in popular favor not alone because of the sociability and good fellowship created by competitive league play as first instituted and promoted by the Congress, but also because of the marked physical benefits which regular indulgence brings about.

For the business and professional man, for those who lead sedentary lives, bowling furnishes opportunity for the finest diversion and exercise. It is a sport which is not too strenuous, as one cannot very well over indulge in it to the extent any serious injury will result.

Practically every individual who today patronizes the many thousands of elaborate Recreation Parlors and Community Centers throughout the country has in mind bowling to satisfy a desire, to mingle with his fellow man and further, to demonstrate his high regard for the game, not for what he might be able to reap in the way of financial gain, but for the hours of relaxation and association with his friends. The ordinary "rank and file" class of bowler likes to participate in bowling for the feeling of true sportsmanship derived from those "friendly-enemy" clashes on the alleys, with the everlasting hope that in the next game or series he will "come through" with his highest score or series. That incentive alone is responsible for the fact that hundreds of thousands of bowlers are continually striving to become just a trifle more expert by improvement in their form and style of bowling.

Where There's Life . . .

Should a bowler know that after a certain number of games his bowling ability had become fixed and established and that he was doomed to retain a certain average and percentage, he would consider the game in the light of weekly routine, then his desire to bowl might conceivably diminish, notwithstanding the fact that he may still hold a liking for the sport in general. Due, however, to the uncertainty of a bowler's ability to score consistently, the game becomes more fascinating and interesting in each succeeding frame. Where is the low-average bowler who is not buoyed up by the conviction that his more expert opponent will at various times roll a series below his normal average, and thus afford him the chance to be acclaimed the "winner."

To become a proficient bowler a

person must have confidence in his own ability and must at least be able to concentrate on his style of delivery to bring about co-ordination of mind and muscle. Tense muscles tend to cause physical and mental fatigue and a lack of the necessary rhythm which detracts from the pleasure and recreational benefits derived from participating in this beloved hobby of millions of people. Furthermore, it handicaps the bowler by decreasing his chances for increased proficiency which is, to a certain extent, the aim and ambition of all consistent followers of the tenpin game.

Disposition of Bowler

There is no more important factor which contributes to the success or failure of any bowling team, be it good or average, than the disposition of its members. A sunny disposition which can smile away the tough breaks which are bound to present themselves is an invaluable asset. The smile which can break upon the appearance of a split is the smile which wins friends, influences people and makes for the grand spirit of good fellowship. Never grumble or complain, just smile or look pleasant. Control of nerves at critical moments of a game falls in the same category with disposition. The keen observer, the steadily-nerved bowler, the one who takes his breaks as he finds them, is the bowler who makes the best teammate, regardless of his bowling average.

Use Own Style

Certain methods adapted to one individual bowler are naturally not applicable to others. The particular grip some bowlers employ would be awkward for another, due to difference in size of hands. Disposition and physical strength should also be taken into consideration.

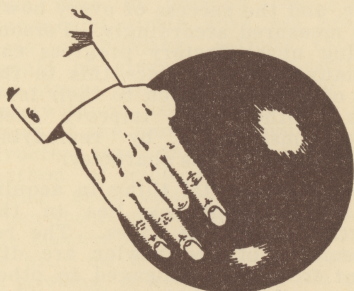
Bowling demands as much (if not more) study and thought, skill and practice as any other game played today and it is by no means so dependent on an element of luck.

If one expects to learn to bowl correctly, or to increase his average, it is very essential that he use the proper equipment, takes the proper stance, uses the proper speed of delivery, carries and times the swing of the ball in the easiest and most natural manner for the necessary rhythm of footwork, selects the proper number of steps used in the delivery, and follows through with the ball when it is released at or just beyond the foul line.

Selecting a Ball

A very important feature in bowling is the choice of a bowling ball. No bowler may expect to attain championship heights, or even meet with fair success, unless he obtains a bowling ball which is adaptable to his particular hand and finger.

The proper bowling ball and a comfortable grip cannot be stressed too strongly, for, after all, the grip is actually the foundation, or the first principle, of bowling correctly. As in other sports, the equipment plays a very important part in one's success in bowling. If possible, the



This shows the grip used by a large number of more proficient bowlers who use a two-hole ball.

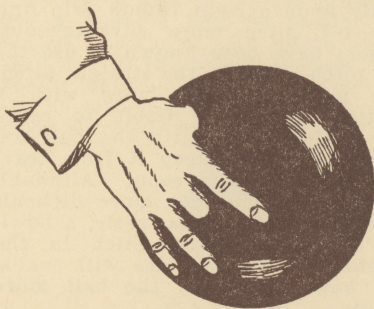
bowler should possess his own bowling ball, bored so that it fits correctly.

If it is impossible for the bowler to acquire his own bowling ball, he should at least make it a point at all times to locate a ball which fits his particular grip whenever and wherever he has occasion to bowl.

Need Natural Grip

It depends entirely on the individual as to the type of bowling ball used. Some individuals have slender hands and long fingers; then again some others have wide and thick hands and short fingers, necessitating one to take into consideration the use of a two or three-hole ball, whichever results in a more natural grip. A ball which can be held in a most natural and comfortable grip, permitting it to leave the hand smoothly when delivered, is the ball to use.

Bowlers who do not possess sufficient strength in the middle finger and may not be able to continually support the weight of the regulation ball, are advised to use the three-hole ball. We would recommend



This illustration of the open two-hole grip shows the fingers spread well apart. Try both a closed and open grip and determine, by experimenting, which suits you best.

that the bowling beginner who possesses a fairly strong grip first try a two-hole ball, for, once having mastered it, the two-hole ball can ordinarily be controlled more readily than one with three holes.

Be Sure It Fits

In selecting the ball, it is essential to consider seriously the span, size of holes and pitch.

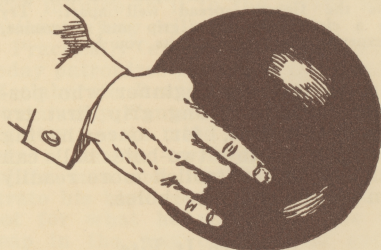
Unless the span between the thumb and finger is spaced properly so as to fit your hand, it is impossible to carry the ball to the foul-line and release it correctly and easily. When the span is too great, the muscles of your hand become strained and uncomfortable; if too narrow, it is impossible to hold the ball without squeezing or pinching the ball in order to prevent it from dropping before it is placed at or just beyond the foul-line.

The size of the thumb and finger hole is equally important. When the holes are too large it is difficult to hold the ball properly; when too small, fingers soon become irritated, torn and scraped because fingers have a tendency to expand after a few balls are rolled. Tight or small finger or thumb holes prevent the release of the ball correctly and easily. They cause the ball to cling to the fingers an instant longer than is desired, thus either reversing or hooking it unnaturally.

Pitch Important

Bowling balls are drilled with thumb and finger holes at various angles to suit the individual. Great caution should be taken in selecting one with the proper pitch. The most commonly used is the 3-8 pitch. Some individuals who depend en-

tirely upon a tight thumb grip find the 1-4 pitch more advantageous. Others have been known to use the 1-2 pitch and also the straight pitch, but usually finger holes with a straight pitch are liable to cause the individual to grip the ball too tightly so as to keep it from leaving the hand too soon. Although it may be somewhat more difficult to release the ball as freely, a bowling ball with some pitch in the finger and thumb holes will enable the bowler to hold the ball more firmly.

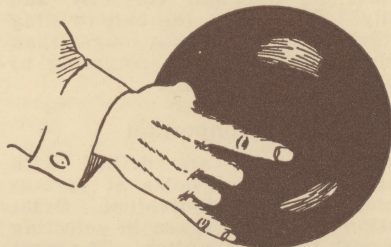


The closed three-finger grip shown above is the one most commonly used. This grip is very similar to that employed when using the slot ball which has one hole large enough for two fingers.

Until several years ago only a very few bowlers were known to use grips other than the conventional straight-hole bore. Now any individual can obtain a two or three hole ball from any manufacturer with the holes slanted in the direction which results in a more natural grip, should the commonly used straight-bored holes produce strain or cause discomfort in the finger or thumb.

Own Ball Best

The importance of possessing a bowling ball which meets all requirements is perhaps much more appreciated as soon as the bowler has been able to become familiar with the fundamental principles of bowling. When he decides to ac-



Three-finger grip opened, finger holes being spaced farther apart and forefinger and little finger spread.

quire his own ball, the novice should request some expert bowler to assist him in the proper selection, taking great care in analyzing very thoroughly his individual grip so that he may have full confidence in his ball.

Importance of Footwork

Athletes know that everything fails when their feet fail. For that reason, they must exercise care in the selection of footwear. There is no competitive sport where the proper attention to footwork is more important than in bowling. It is of primary importance in learning the game, and the success of every bowler is measured accordingly. Persons making unsatisfactory progress can in many instances trace this to the lack of attention given to their footwork. Others can improve their game considerably by remedying minor faults of this character.

The fundamental thing in acquiring perfect footwork lies in the selection of correct shoes. The requirements of the bowler are different from those engaged in other sports, and for that reason a shoe that a bowler can use with confidence should be selected. It is extremely difficult to release the ball in the right manner and at the desired spot unless the proper shoes are used. Ordinarily the soles of street shoes are too stiff and unyielding and become so highly polished that the necessary purchase or leverage on the approach cannot be obtained.

Use Bowling Shoes

In a great many bowling leagues, and in some tournaments as well, bowlers are not permitted to participate unless they have shoes which do not mark up and deposit rubber or dirt on the runways thus hampering other bowlers who wear the correct footwear.

Bowlers use bowling shoes of different styles. Those in almost universal use for right hand bowlers, however, have rubber heels with the left shoe having a sole of elk or buckskin, while the entire sole of the right foot shoe is of rubber. A common practice also is to place an elk or leather tip on the toe of the right shoe, primarily intended for bowlers who acquire the habit of using the front part of their right foot to obtain better leverage, thus prolonging the life of the shoe. The

left sole for right-handed bowlers should be quite smooth to permit the bowler to slide with great ease. Some bowlers who have less difficulty in starting because of a slower delivery, have buckskin or elk soles on both shoes. Others, however, because of their particular style, prefer a rubber tip or strip on the right shoe to obtain firmer leverage or balance when delivering the ball.

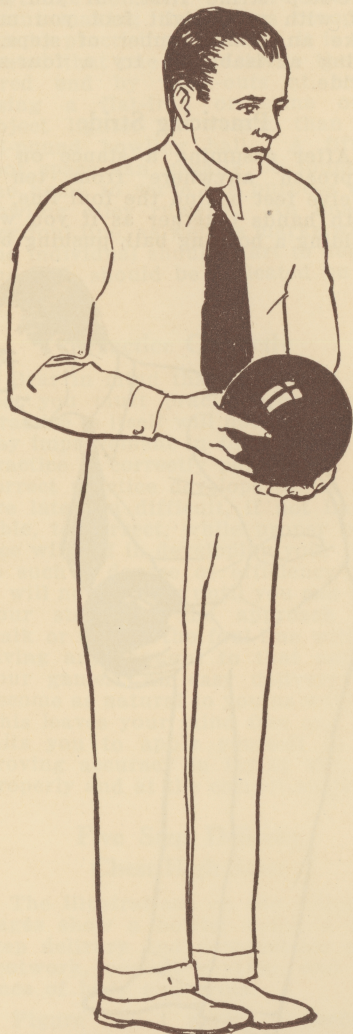
Develop Comfortable Stance and Easy Stride

For the individual who has never bowled before, or who has never been able to develop the proper stance and stride with his present style of bowling, serious thought should be given to first practicing the stance and striding to the foul line without using a bowling ball. Many of the most proficient golf instructors teach the novice the proper method of club swinging without using golf balls, particularly so when the beginner has no idea as to the manner in which the ball should be hit. So it is with the beginner in bowling, if he is taught the game step by step similar to the manner in which anything else is taught, he will learn the game in far less time than the bowler of yesterday who simply picked up what information he could whenever he could. Almost without exception an individual's first thought in bowling, when not properly informed, is to just roll the ball in the general direction of the pins. In many cases these beginners become disgusted after their first few attempts at bowling and give no further thought to the game, assuming it to be too difficult to master. Others, more patient, usually develop some peculiar style, which may later enable them to become average bowlers with constant practice but never to become consistent high scorers.

Varying Stances

Naturally there are varying types of stances or positions used by expert bowlers. Some stoop forward slightly, holding the ball just below the waistline at the point where they start their stride. Some stand upright, holding the ball just at the waistline, while others hold the ball so that it almost touches the chin. Then again the crouch style is used by a few. As in golf, the beginner in bowling should learn the most commonly used style. Later by use

of several styles in actual practice with a bowling ball he should be able to select that one which suits him best. If the bowler is short, he usually stands more upright, and if tall, he stoops forward a bit or develops a crouch stance.



Probably more of the most proficient bowlers use this style than any other. Setting back on your heels even a trifle more, and also spreading the feet a bit farther apart than shown in the above illustration, is oftentimes found to provide a very comfortable stance.

There is no prescribed or definite method of running or striding down the runway to the foul line. It is essential that the individual learn through practice the manner most

natural and easiest for him if he hopes to get a smooth, rhythmic and easy stride and swing. The majority of bowlers take four and five steps to the foul line. If you feel as though you must start with your left foot, it is suggested that you try a five-step stride first. If you step off with your right foot you must take an even number of steps, it being advisable to try a four-step stride.

Practicing Stride

After assuming a stance on the approach anywhere from ten to twelve feet behind the foul line, put both hands together as if you were holding a bowling ball, pushing both



This style of half crouching is employed by those who have difficulty in swinging the ball down from a greater height. When using this style a shorter back swing is used.

hands forward a trifle just as your body moves forward and either walk or run slowly, whichever comes most natural. Swing your arm as though you carried a ball, finishing at the

foul line with your body bent forward at the hips, with your shoulders, left foot and right hand forward, both knees bent a trifle, and your right foot back with the toes turned just a trifle to the right. Your left arm should be used to balance yourself. When in position to release the ball your left foot should be pointing forward and your right foot turned slightly to the right. This position enables you to retain your balance and keep on your feet.

Co-ordination—Arms and Legs

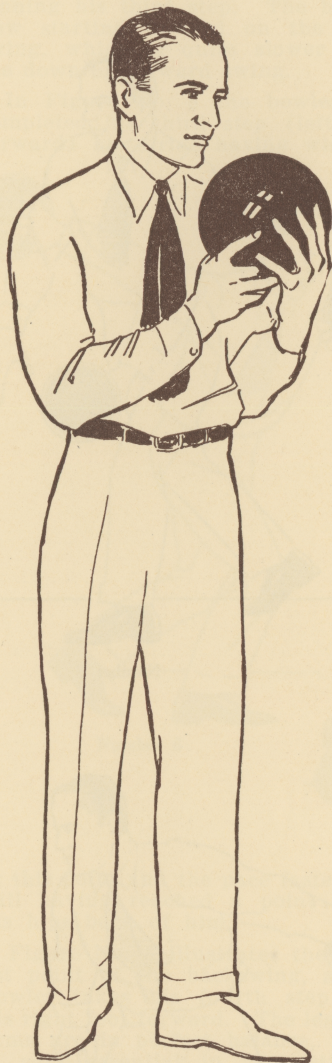
Co-ordinating action of the arms and legs in striding down the runway are very essential to the proper delivery of the ball, being so vitally related that a slight error in execution or improper timing results in a poor delivery. First of all there is the run, or walk, second the swing, and thirdly the follow through.

No matter how many steps are taken by the individual, he should at all times finish with his left foot forward. He will find it unnatural to release the ball with his right foot forward and very difficult to control it with any degree of accuracy. True, there are exceptions to the general rule where bowlers reverse the order of delivering the ball by finishing the stride with the right foot ahead instead of the left foot, but it is always recommended that the beginner endeavor to develop a form that is most universally followed and produces the best results.

Style of Approach

Sometimes a beginner will find his particular delivery to be so awkward and trying that his body, arms and legs will not coordinate. Again there are others who simply cannot seem to adapt themselves to any definite kind of a stride in their attempt to deliver the ball. In such instances it is usually necessary to give the novice special instruction so that he may overcome this awkwardness. The following plan has been tried by a number of individuals and has met with fair success. First of all, it is suggested that the individual employ a one-step delivery, enabling him to apply all of his thoughts to the simple process of taking one step forward with his left foot, and swinging his right arm in unison. After it becomes quite simple to go through this action, two steps should be taken, adding an extra step in the

delivery after each of those attempted have enabled him to acquire a rhythmic swing, until the desired number of steps have been per-



Quite a number of our leading exponents use this style in getting set before starting their stride to the foul line. Beginners, or those who have difficulty in setting themselves comfortably, should try the three styles shown in this article, so that they will definitely be able to determine the style that suits them best.

formed with precision. This procedure can be used to advantage also by the low average bowler who finds his present style clumsy and causing considerable strain and wishes to de-

velop a more smooth, proficient and accurate stride and swing.

Practicing at Home

For beginners and others who are ambitious to develop a smooth and rhythmic delivery, but are hesitant about making themselves conspicuous by practicing in public, it is suggested that one can achieve the desired end by work-outs at home, using a flat-iron or some other object lighter in weight than the 16-pound bowling ball. A fifteen foot space can usually be found in the home to serve the purpose of a bowling alley runway. An imaginary foul line, as well as marks where the individual should start to deliver the ball, should be indicated on the floor.

Practice Correctly

Bear in mind that to become perfect you must practice continually. Practice in itself will not bring about any improvement in form unless the practice is correctly performed. Incorrect practice develops faults that are later on difficult, if not impossible, to correct, while proper practice will aid in developing your form to such a degree of efficiency that it will not be long until you can take your stand on the approach and walk or run to the foul-line without giving any thought to that part of your game. An easy delivery will become as natural to you as walking. This leaves your mind free and permits you to apply yourself to improving accuracy in laying the ball properly and at the correct angle.

Five Step Delivery Chest High Start

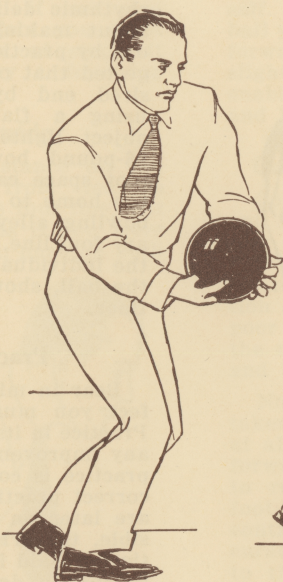
The illustrations on the following pages show a bowler using a five-step delivery and demonstrate good footwork, perfect rhythm, and balance of body and arms.

Figure No. 1 shows a perfectly comfortable position of the bowler on the approach, just ready to step off with his left foot. Step number one with the left foot is very short (not shown) just sufficient to enable him to push the ball forward to obtain a smooth and easy downswing.

Figure No. 2 shows the bowler starting his second step. Note the position of the ball at this point, as well as his graceful semi-crouch.



Number 1



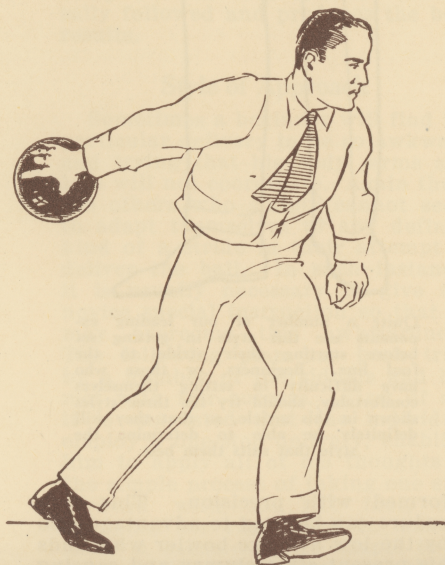
Number 2



Number 3



Number 4

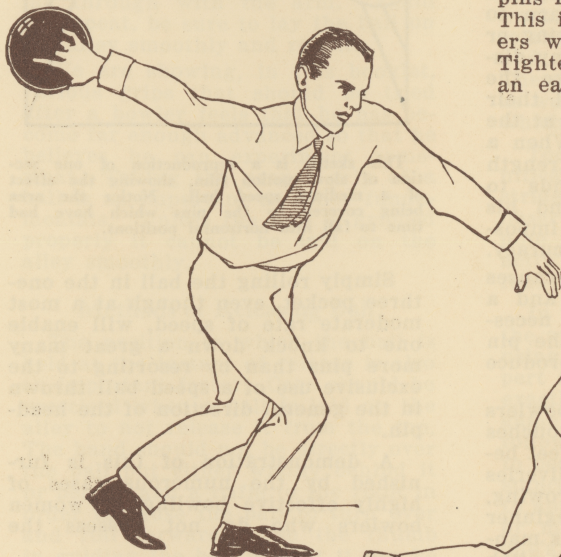


Number 5

The bowler has completed his second step, with the right foot forward, in Figure No. 3.

Figure No. 4 shows him just beginning his third step. The ball is now starting upward on the back swing, which is quite slower than the down or forward swing.

In Figure No. 5 the bowler has completed his third step (left foot forward) his stride having widened



Number 6

at this point and the pace faster, the ball having reached a point above his hips back of him.

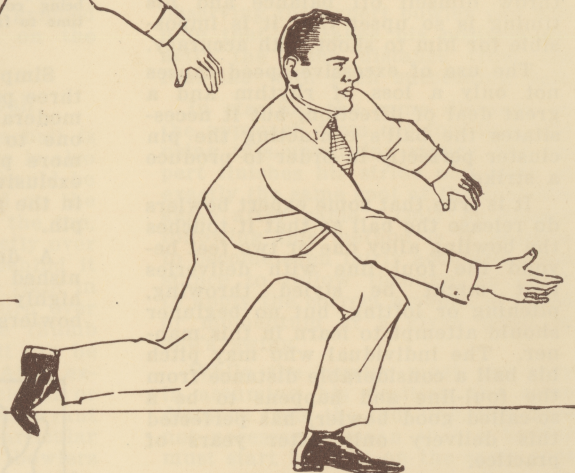
Figure No. 6 illustrates the highest point of the backswing, as the bowler takes his fourth step with his right foot forward. The legs and arms are in perfect balance, which is very essential in completing a smooth and accurate delivery. Just as the right foot rests solidly on the runway, the ball begins on its downward swing, bringing the left foot forward.

Figure No. 7. The fifth and final step. The bowler finishes with a much longer step and a shorter slide, and is in perfect balance when he comes to a stop at the foul line in this position. Note the smooth, graceful follow-through, which is so necessary in rolling an effective ball.

The figures on Page 18 and on this page plainly show that each succeeding step is slightly longer, the final step being the combination of both a stride and a slide.

The arc through which the ball travels in the forward or down-swing is larger than that of the back swing.

In order that the ball be permitted to exert the desired effect upon the pins it must roll—not slide or skid. This is brought about best by bowlers who bowl easily and naturally. Tightened or tensed muscles prevent an easy delivery.



Number 7—The Last Step—On Left Foot

After you have decided upon the number of steps which come to you as the easiest and most natural, you can then pursue your style with patience and diligence, enabling you to apply your entire thought to developing a delivery both graceful and effective.

When you have developed your delivery to such a degree that you can go to the foul-line without giving any thought to any detail of your approach and are able to stop at the line with the left foot forward in perfect balance, you have then reached the stage when you can confidently step on a bowling alley and begin rolling the ball that you have previously selected as best suited to your particular needs.

Shadow Bowling

Be careful to place the ball at, or just a little beyond, the foul-line when delivering it on the bowling alley. No great concern should be given at the outset to the number of pins being knocked down. In fact it is recommended that you practice at first without having any pins set up. Forget that the pins are set up sixty feet beyond the foul-line. Imagine that they are only fifteen or twenty feet away and learn to roll the ball instead of throwing or pitching it out on the alley any distance. Most beginners make the great mistake of exerting all their strength in throwing the ball at the pins instead of rolling it. When a bowler uses his maximum strength in delivering a ball he tends to throw himself off balance and his timing is so upset that it is impossible for him to shoot with accuracy.

The use of excessive speed causes not only a loss of rhythm and a great deal of direction, but it necessitates the ball's contacting the pin cluster perfectly in order to produce a strike.

It is true that some expert bowlers do release the ball so that it touches the bowling alley one or two feet beyond the foul line with deliveries that might be styled throwing, pitching or lofting, but no beginner should attempt to learn in this manner. The individual who may pitch his ball a considerable distance from the foul-line and happens to be a so-called good bowler, has perfected this delivery only after years of practice.

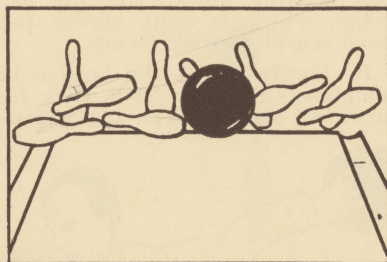
Finish in Balance

The novice who follows to the letter the instructions set forth, will soon find himself rolling a ball which will enable him to always arrive at the foul-line in balance, with the left foot forward and the right foot considerably back. A ball thus rolled is far more effective than when the beginner attempts to use additional effort in imitation of some other bowler's throwing or pitching of the ball. The important thing is to have the ball always under control.

Use Medium Speed

Bowling pins are only 4 and 77-100ths inches wide, but are 15 inches in height, and when a ball of slow or medium speed is used the pins are tipped in all directions and

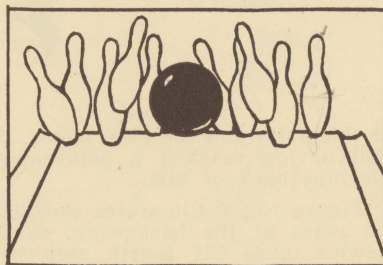
cover a far greater area in leaving the alley than when struck with excessive speed and driven off in a standing position.



This sketch is a reproduction of one section of slow motion film, showing the effect of a medium speed ball. Notice the area being covered by the pins which have had time to fall into horizontal positions.

Simply rolling the ball in the one-three pocket, even though at a most moderate rate of speed, will enable one to knock down a great many more pins than by resorting to the exclusive use of a speed ball thrown in the general direction of the head-pin.

A demonstration of this is furnished by the numerous cases of highly effective bowling by women bowlers who do not possess the



Here we reproduce one exposure of slow motion film showing the effect brought about by a ball rolled with excessive speed. The ball has hit the pins hard enough to lift them from the alley bed, has reached the back row and yet none have had time to fall into horizontal positions.

strength to roll a ball with a great deal of speed.

After a bowler has become fairly proficient he can then experiment with a change of pace, but when learning or attempting to improve his form he should studiously confine his efforts to the use of the de-

livery and speed that comes most natural to him.

There are instances when a slower or speedier ball than the natural one may be employed to good effect, and these will be pointed out and explained in later instructions.

In beginning to roll the ball try to start it between the center and the right hand edge of the alley, rolling it as straight as possible, and using a smooth delivery and following through with the arm. Again we repeat, be sure to lay the ball on the alley smoothly and roll it.

We are showing, in this booklet, various grips that should be tried after a bowler feels that he has become far enough advanced so that he believes he can experiment somewhat. Taking the proper grip of a ball is as important as other fundamentals. Unless the ball is gripped properly it cannot be laid on the alley smoothly.

Methods of Releasing Ball

The position in which the ball is held at the instant of release is also an important factor. Care should be exercised when a ball is laid on the alley to not release it from the top. The hand should not be directly over the ball but either wholly behind it or behind and a trifle to the right in order to cause the ball to turn over and roll forward. Use the thumb in guiding the ball so that it can be rolled at the correct angle. After experimenting with either a closed or open grip anyone who is observant will soon learn which particular grip suits him best. Some bowlers push their thumbs as far into the thumb-hole as possible, while others hang the ball on the first joint of the thumb. Only by experimenting can one determine definitely which will prove the more serviceable.

Relax Your Muscles

Refrain at all times from putting forth your full effort in delivering the ball. Permit your ball to hang freely without tensing up all muscles; permit your entire body to relax as much as possible, swinging the ball forward and backward as though the arm were a pendulum. This will bring about a far better and smoother delivery than when forcing or pushing the ball. Do not crook your elbow. Care should be exercised to avoid swinging the ball too high on the back swing; this fault would naturally cause you to

hurry in bringing it forward again and upset your timing, it being impossible to have your feet and the ball in the correct corresponding positions unless your back-swing is in proper time with your feet.

Use Same Stance and Stride

We have up to this point attempted to illustrate the proper method of executing the actual delivery of the ball, the selection of a ball, foot-work, grip, stance, the run or walk to the foul-line, the rhythmic swing, and finally the follow through. There are still other fundamentals as well as technical points, however, which we intend to dwell upon later.

Too few bowlers realize the significance of an unchanging stance, stride and back swing. By closely observing the expert bowler you will note that he takes his position exactly the same distance from the foul-line with each succeeding ball.

In starting the same distance on the approach from the foul-line, and using this unvarying stance, the expert finishes his stride and slide at exactly the same spot at the foul-line game after game. Only by closely following this method is it possible to become even fairly accurate, from stance to follow through, in order to apply the correct amount of speed or momentum at a given point in one's swing.

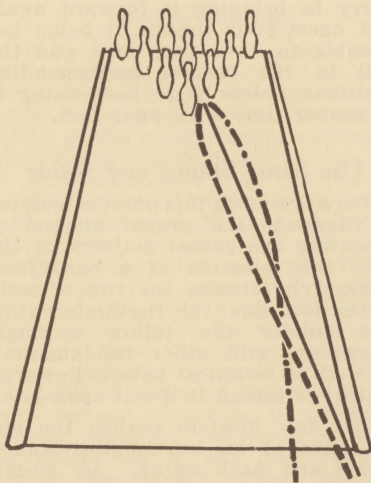
While the bowler must not vary in assuming his position the same distance from the foul-line, this does not necessarily mean that a bowler must start his ball on the same spot on every approach, as two alleys are seldom found to be identical. This we will explain in detail later on.

Hook Can Wait

A bowling ball may be rolled so as to bring about four distinct actions. The ball may be rolled perfectly straight, with a back-up, a short breaking hook, or with a curve, all depending upon the method used in your approach and the release of the ball.

But before attempting any tricks or styles of delivery other than that which comes natural to you, all beginners or those of ordinary ability should roll the ball out without making any attempt to bring about an unnatural back-up or hook.

In too many instances, the individual becomes too anxious to develop



Here we show how the paths of the various deliveries cross one another. The straight and back-up deliveries are made from about the same spot at the foul line. The straight ball must be pointed directly into the 1-3 pocket, the back-up full onto the head-pin. When rolling a hook the ball must be rolled out at an entirely different angle than when using either straight or back-up ball.

a hook or back-up before he becomes proficient in finding the one-three pocket, as well as in making spares.

For the individual who is attempting to learn the game, we advise the use of a straight ball delivery, because it is the easiest to control. The important factor at the start is to learn the fundamentals thoroughly, so that later on the stance, stride, and swing will become a mechanical and subconscious action.

One Thing at a Time

While it is the aim of the expert bowler to develop a hook which mixes and spills the pins much better to obtain strikes, this form of delivery is not suggested until one has learned the first fundamentals of bowling, hitting the one-three "pocket" and making spares consistently.

Too many individuals attempt to develop a hook or curve when first taking up the game, with the result that they are not only poor spare bowlers but seldom find the "pocket." If these individuals would be satisfied with bowling a straight ball until they have become good spare bowlers and can place the first ball delivered in the right spot, they would find that when the time comes

to adopt the hook, curve or back-up, they will have a more accurate and finished form of delivery.

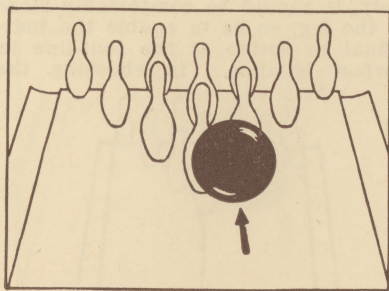
Deliver at Correct Angle

After a bowler has definitely decided just how he intends to release the ball, he must then determine the angle at which the ball must be rolled on the various alleys, and he must likewise determine the particular spot at the foul-line at which the ball is to be placed when releasing it.

Your conclusion can only be arrived at after several balls have been rolled on a particular alley and these deliveries must be made naturally. By this we mean using your regular delivery without having stumbled, stuck on the approach, or being off balance in making the delivery. Should the ball be rolled into the pocket and a strike obtained by means of an unnatural delivery, you must not permit this strike ball to influence you in deciding definitely how that particular alley should be played. Only when deliveries are correctly made and the ball either misses or enters the "pocket" can you hope to learn whether you are bowling correctly on that particular alley. It is only natural that, if you roll the ball correctly, starting it from a particular spot at the correct angle and with your natural speed and the ball enters the pocket and carries the pins, you must then continue to take identically the same stand on the approach, go to the foul-line in the identical manner and deliver the ball with exactly the same speed and at the correct angle repeatedly, if you wish to obtain any great number of strikes.

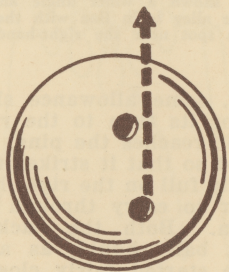
Straight Ball

Imparting "English" or a wrist turn at the moment the ball is released, is perhaps the most difficult form of technique for any individual to achieve. Even the most expert bowler finds it difficult to apply the same turn each time he delivers the ball, particularly on different alleys. For that reason, we maintain that all beginners should refrain from rolling anything but a straight ball if they aspire to improve their game. Any attempt to "bowl like the expert" is more apt to throw the individual off in some other department of his game. Another thing, when learning it is much easier for one to bowl straight at a mark than to



In comparing the above illustration with the one showing the back-up ball contacting the head-pin, it will be seen that the straight ball should not cover as much of the head-pin as the back-up, because less deflection takes place when the ball enters the pins as indicated by the arrow.

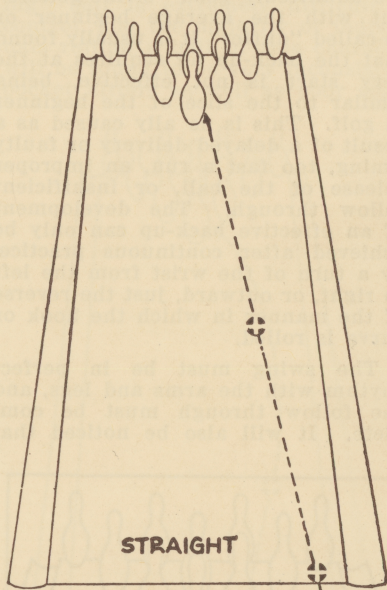
aim to the right or to the left of it; furthermore no beginner should attempt turning of the wrist or lifting of the fingers when releasing the ball such as is necessary in producing a hook, curve or back-up. In any sport or in any form of athletics, one must endeavor to learn the primary principles first. In golf none but the experts alter their swing to



When a strong rolling ball with very little or no spin is desired quite a number of bowling stars release the ball from approximately the position as shown here. The palm of the hand is practically behind the ball, the thumb released first and the ball lifted or turned forward by the middle finger at the moment of release, causing it to roll sooner than when released with a twist.

hook or slice the ball when changing conditions demand a change in stroke during the course of a regular round of match or tournament play. They have mastered the general principles, the task of learning to swing the clubs in a prescribed arc or groove. No golf instructor begins teaching the aspirant golfer to hook or slice the ball until he is able to shoot consistently in the low 80's or high 70's. Neither should

the beginner in bowling be instructed to learn these finer points of the game, such as employment of the hook, curve or back-up, until he has perfected rhythmic movement of arms and legs, and until he is able



In the case of the straight ball it is not necessary to play your ball either to the right or left of the mark at which you are rolling unless an alley takes either a decided hook or back-up. The spot at the foul-line shows where the ball is started; the other being the spot you must roll your ball over in order to find the 1-3 pocket.

to place the ball just where it is intended to such a degree of accuracy than he can do so mechanically.

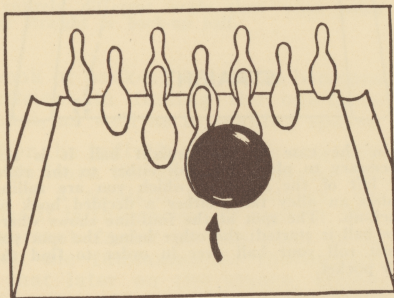
When the individual has followed these suggestions in learning the game by rolling a straight ball, making no attempt to turn the wrist either one way or the other, and has been able to consistently hit the one-three pocket on the first delivery, as well as make his spares regularly, then he has reached the point where he can give serious thought to rolling a "strike-getter" ball, when every effort must be made to roll the first ball in each frame into the one-three pocket as often as is possible by the use of either the hook, curve or back-up.

Back-up Ball

Let us first explain the back-up, or left to right spin or turn of the ball, which is found to be profici-

ently used by only a very few expert bowlers, and then only after several years of continuous practice. In rolling a back-up, the ball should be pointed to the left of the mark being bowler at. Some back-up deliveries are admittedly good "strike-getters" but with the average beginner or so-called "duffer" it is usually found that the back-up he acquires at the very start is not effective, being similar to the slice of the beginner in golf. This is usually caused as a result of a delayed delivery or faulty timing, too fast a run, an improper release of the ball, or insufficient follow through. The development of an effective back-up can only be achieved after continuous practice, by a turn of the wrist from the left to right, or outward, just the reverse of the manner in which the hook or curve is rolled.

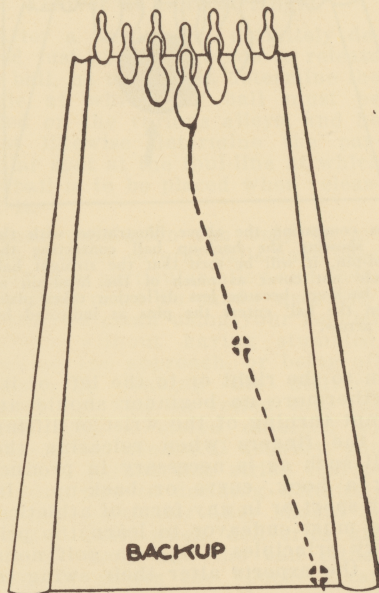
The swing must be in perfect rhythm with the arms and legs, and the follow through must be complete. It will also be noticed that



A back-up ball entering the tenpin set-up must cover more of the head-pin than either straight or hook balls because upon contact with the head-pin it deflects to the right to a greater degree than a straight ball or a ball coming in from the right. (Note direction of ball as shown by arrow.) If you will carefully note the two other illustrations, you will notice that the wider the angle at which the ball enters the set-up the thinner the head-pin may be hit and still carry a strike.

the individual who has an effective back-up or reverse hook, as it is frequently called, swing the ball practically straight back or outside a trifle on the back-swing. The individual bowling the straight ball has a perfectly straight back-swing. Possibly the majority of those rolling the hook or curve ball swing the ball straight back also, but a great many expert bowlers, it will be noticed, swing back inside or a trifle back of the body. In every case, however, when the ball is being swung forward and is opposite the

body, it should be comfortably close to the leg, so as to enable the individual to arrive at the foul-line in perfect balance. In shooting the

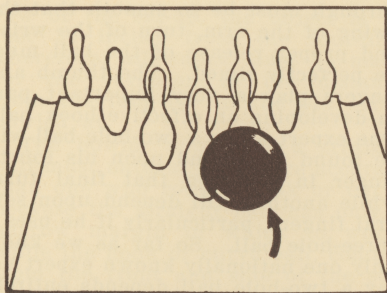


Here is shown a wider angle and the spot out on the alley is in line with the number 2 pin and a spot near the right-hand corner of the alley.

back-up, some allowance should be made for its turn to the right just before it reaches the pins. It must be rolled so that it strikes the head-pin fairly full on the right-hand side in order to carry through into the five pin. Both the back-up and straight ball should, as a general rule, be started fairly close to the right-hand corner of the alley. The back-up differs from the straight ball, however, in that the ball should be pointed more directly for the head-pin while the straight ball should be pointed directly at the one-three pocket.

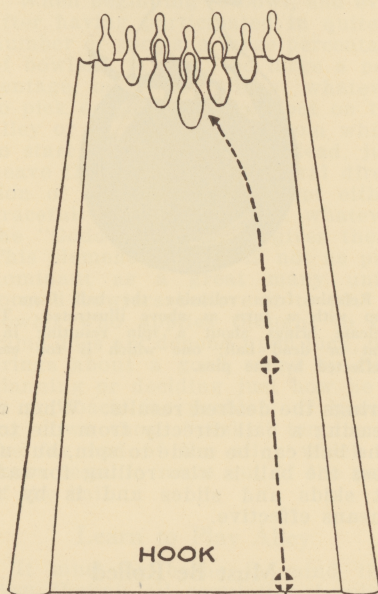
Hook and Curve Ball

After years of constant experimenting and practicing, experts have determined that the most effective ball in mixing the pins and gathering strikes is the hook ball and the right to left curve, assuming you are right handed. The short-breaking hook is the most popular of all hook balls, being the least difficult of the curving balls to master. Bowlers rolling a ball of this character accomplish this by giving the ball



Because of the angle at which the hook ball comes into the pins, less deflection to the right coming about upon contacting the head-pin, the hook ball has more latitude to work in. This type of ball leaves the five pin, five-sevens, five-tens and eight-tens less than either straight or back-up balls. The hook bores in and generally carries the five pin into the eight pin as it should.

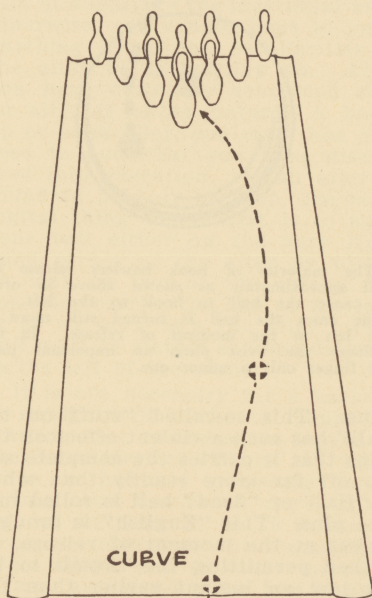
only a small turn and only a fair amount of speed. As a general rule a hook ball of this character can usually be handled to better advantage by placing it farther in from the right-hand corner than the straight ball or back-up, the distance depending upon the characteristics



It will be noticed that when employing a hook the bowler should in most instances start his ball to the left of the right-hand corner, say from 6 to 15 inches, all depending upon how much hook his ball takes in addition to which he must know how the alley runs and then use an angle to bring his ball into the pocket. In this case, the spot over which the ball is to be rolled is in line with the spot he has chosen at the foul-line and the number 6 pin.

of the alley, but in most cases about somewhere between the center of the alley and the right-hand corner, aiming to the right of the spot at which you hope to have it finish.

The wide sweeping curve or "looping" ball is extremely difficult to control, and the majority of individuals rolling a ball of this character will be found to be very inconsistent pocket hitters as well as poor spare



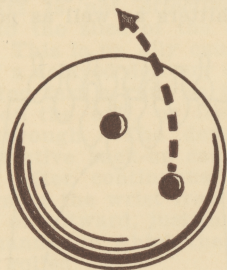
This shows an exaggerated angle. Curve ball bowlers must begin their ball at a point farther to the left of the right-hand corner and point their ball more to the right than the ordinary hook bowler.

bowlers. Very few experts use this type of delivery. A wide curve demands not only a great deal of practice to control, but requires an uncanny judgment of angles and speed. The curve ball, on the average alley, should be placed even farther in towards the center of the alley and pointed considerably toward the right-hand side of the alley, allowing plenty of space, according to the size of the curve and the characteristic of the alley for the proper angle on the one-three pocket.

"English" on the Ball

The most proficient bowlers rolling a hook or curve develop their strike-ball to such a degree as to bring about what a great many bowlers term "a large pocket," meaning that this particular ball

carries the full set-up off the alley by means of either a thin or fairly full hit in the one-three pocket. The most proficient bowlers are capable of imparting "English" or "stuff" to the ball, a rolling and rotary motion, which influences the direction which the ball will take both before and after it comes in contact with the



The majority of hook bowlers release the ball approximately as shown above in order to cause the ball to hook to the left. In some cases the ball is turned still more to the left at the moment of release. In this delivery the wrist plays an important part, the finger only a minor one.

pins. This so-called "stuff on the ball" has such a violent effect on the pins that it carries the complete set-up off far more readily than when a "flat" or "dead" ball is rolled into the pins. This "English" is brought about at the moment of release, by either permitting the thumb to let go just an instant earlier than the release by the finger (or fingers, in case a three-hole ball is used) or by having the palm of the hand behind and a trifle to the right of the center of the ball, then pulling the ball upwards with the finger, or lifting a trifle, at the moment of release.

This lifting or pulling upward causes the ball to roll forward earlier than if thrown out on the alley. A ball which is thrown on the alley will slide quite a distance before it begins to roll. This is to be avoided except in particular instances which will be pointed out later.

Timing Essential

A ball rolling forward is very effective, while a sliding ball will deflect to a greater degree when it comes in contact with the pins than one which rolls. It is very essential when rolling a hook ball or curve, to give the wrist the proper right to left turn. Refrain from turning the wrist too early, as this will surely result in a poorly delivered ball. The complete action from stance to follow

through must be so smooth that the swing of the arm, turn of the wrist, and proper release of the ball must be perfectly timed. The thumb and fingers play a very important part in developing an effective hook ball. One expert using a two-hole ball will be found to depend upon his fourth finger in applying that final turn, while another will depend upon several fingers, particularly if he uses a three-hole ball. So far as we know only one nationally known expert using a two-hole ball depends entirely upon his thumb to give the ball the necessary turn, but this style is very unusual and not recommended to the average bowler.

The Ineffective Ball

Be careful to refrain from delivering the ball with the back of the hand toward the pins. A ball delivered from the top, even though it enters the one-three pocket, is generally a "dead" ball and very seldom



Refrain from releasing the ball from the top with a turn as above illustrated. This release brings about a spin resulting in a flat or dead ball; one which is too easily deflected by the pins.

brings the desired results. When releasing a ball directly from the top, the ball can be made to spin, but unless the ball is also rolling forward, it skids and slides and is by no means effective.

Must Be Rolled

We must repeat, that in order to bring about an effective ball, the ball must roll instead of skid or slide into the pins.

It must be kept in mind that when you bowl at the complete set-up, the object at which you are bowling is 60 feet from the foul line, but when rolling at a single pin in the back

row of the set-up, the object is 60 feet 30 inches from the foul-line. Therefore, allowance must be made for the variation in the distance from the foul-line to the pin being bowled at.

The bowler who rolls a straight ball must naturally be more accurate than one who rolls a hook or curve because the straight ball has only a narrow margin in which to work, while the hook or curve ball, coming from the front and side of the set-up, enters the pins at such an angle so as to enable the ball to carry the five-pin to a better advantage.

Carrying That Five Pin

Even though a great many bowlers apparently believe all that is necessary to bring about a strike, is to have the ball contact the head-pin, we caution those who wish to eventually roll an effective ball, that it is necessary for the ball to carry the five-pin out properly, the five-pin, in fact, being the king pin of the set. Unless the five-pin is carried correctly, no great number of strikes can be expected.

When beginning to bowl, and even after having participated in quite a number of games, a large percentage of bowlers, in fact, too large a percentage, make no attempt whatever to pick out a particular spot on the alley or at the foul-line from which to start their ball, but instead, just heave the ball in the general direction of the pins, and accept either gracefully or ungracefully, whatever the "Goddess of Luck" gives them. This element of luck is not as predominant as a great many uninformed bowlers believe it to be. A bowler who applies thought to his game does not depend upon luck, but brings about a good score by first planning or deciding just how he is to approach the problem of knocking down those "pesky" tenpins at the far end of the alley which at times seem to move out of the path of the ball.

Learn to Play Alley

It must be borne in mind that even though all regulation bowling alleys are alike in length, pins in all cases are spotted in the same manner, all pins being 12 inches apart center to center; yet, some alleys are what we term, natural; some hold or back-up, while others have a tendency to make a ball hook. Therefore in view of the foregoing, it is at all times very essential that a

bowler should definitely determine just how his particular style of delivery will act on the various alleys. This can be determined by either watching the action of a ball rolled by some other bowler, or by the course that your ball takes.

When attempting to learn the "run" of an alley by observing the bowling of another individual, you must first know definitely just what sort of a delivery the individual uses, otherwise, you cannot hope to learn anything as to the peculiarities of the alley he is bowling on. After you have definitely concluded that an alley is either natural, a back-up or hook alley, you may then proceed to put what you have discovered into execution. If an alley is found to hold or back-up, the most logical thing to do first is to start your ball either on the very right hand corner of the alley or within an inch or two of the corner. If the alley carries the ball to the left, or as we say, "is a run alley," your ball must be started at some distance to the left of the corner.

It is not necessary for a back-up or straight-ball bowler to change his starting spot to the same degree as the hook bowler. There are times when it becomes necessary for a strong hook bowler to move to the left as much as 14 to 18 inches in order to overcome the vagaries of some alleys, and in other instances it may be necessary for him to start his ball from the very right hand corner.

Then, again, there are some alleys that are almost impossible to "hit" to advantage from any angle, in which case a slight change in speed, either faster or slower, will sometimes enable you to "find" the alley.

Some exceptionally proficient bowlers start their ball from practically the same spot on every alley and simply roll either a speedier or slower ball—more speed when the ball carries to the left and less speed when the ball holds back a trifle.

Otto Stein is an outstanding bowler of this type and his record speaks volumes for this system.

Marino Example

Others move to different spots, near the corner generally on alleys that hold, and moving inside (to the left of the corner) when alleys hook or run fast.

Hank Marino demonstrates this system to perfection.

There are, however, cases when it is necessary for one to start his ball near the corner even when an alley hooks fast. When this is found to be the case the angle at which the ball is pointed must be changed. That is, instead of pointing your ball towards the right a trifle it is started parallel to the outside edge of the alley with a little added speed, preventing the ball from hooking as easily as would be the case when having it roll immediately after releasing it.

At times it becomes necessary to pitch the ball out on the alley say three, four feet, or even farther, beyond the foul line in order to prevent it from hooking too quickly.

Very few bowlers are able to control a ball so well that they can play all alleys from about the same spot (generally from near the right hand corner) by hooking, straightening, or backing up a ball by the use of the wrist or forearm. Jimmy Smith is a very good example of this type of bowler.

Spot Bowling

Most good bowlers pick a spot from some point near or at the foul line to a spot almost half way down the bowling alley. One bowler will find the method of picking only a spot at the foul line to his liking, while another prefers to pick a spot or an imaginary line part way down the alley. In all cases the principle is practically the same, although it is generally conceded that the individuals who pick a spot beyond the foul line a short distance are in the majority.

Those who employ some definite system of spotting their ball are by far the most proficient.

The honest-to-goodness spot bowler who refrains from looking at the pins until after the ball has left his hand and attempts to put the ball down on a certain spot at the foul line may be compared with the golfer who keeps his head stationary and his eyes concentrated on the golf ball throughout the swing, in order to maintain a center of balance and to keep from throwing his stroke out of alignment.

Many expert bowlers call their spots by so many boards, one preferring a point eight or nine boards from the edge of the alley while another chooses ten or twelve boards in from the edge.

Don't Watch Pins

The importance of spot bowling cannot be over-emphasized, as it has a decided advantage over "pin" bowling where the individual keeps his eyes on the pins during the delivery of the ball. The individual who looks at the pins only, when delivering the ball, just hopes that his ball will roll into the one-three pocket, when as a matter of fact he is only haphazardly throwing the ball out on the alley in the general direction of the pins. He has no idea as to the particular spot where the ball should be placed, and he cannot do so consistently when he is looking at another place beyond this point or beyond the spot over which he should cause his ball to roll.

Bear this thought in mind. Endeavor to control your ball by always knowing where you start it and how you roll it, being certain to concentrate on the proper rhythm, timing and follow through as well as drawing an imaginary line from the foul line to the spot out on the alley over which you intend to have your ball roll.

In attempting to illustrate the different angles at which the bowling ball is rolled by those who employ the various deliveries, such as straight, backup, hook and curve, it is necessary to exaggerate the angle because it is impossible to show an alley in the proper proportion.

We have suggested the necessity of definitely determining one of a number of methods of rolling the ball into the one-three pocket by means of four distinct deliveries.

Alley Bed Conditions

The fact that one alley will cause a ball to hook or run to the left while another is either a trifle stiff or definitely brings about a back-up has resulted in a great deal of discussion, argument, conjecture and theorizing on the part of hundreds of thousands of bowlers. There are a number of reasons for some alleys hooking while others hold back, and no doubt some of the statements which follow will occasion more discussion and possibly minor controversies.

First, it must be admitted that it is possible that resurfacing mechanics become careless at times in failing to see to it that all alleys are made perfectly level. If an alley is only a small fraction of an inch

higher along the right-hand side, such an alley would have a great tendency to cause the ball to travel toward the lowest point—the slower the ball the greater the hook or curve. If an alley is in the least concave; i. e., higher along the edges than in the center, it would naturally hook. Even though a ball was started perfectly straight, the ball is bound to carry in toward the center on such an alley.

There are means for definitely determining whether an alley is perfectly level across the narrow way. But it is difficult to determine whether the back end is either higher or lower than the front end, unless a surveyor's transit is employed. And if an alley is low at the pit end, such an alley would take a hook more readily than one perfectly level end to end, than one that ran up hill. Therefore, we must conclude that a bowling alley which is only a trifle lower at the pit end will hook, while one which is higher will have a natural tendency to cause the ball to hold back or back up appreciably.

An alley which is high along the left side would also without question cause the ball to fall back or to hold somewhat.

A great number of bowlers have an idea that the grain of the wood in the strips of which the alley is built have some bearing upon the run of the alley but this theory must be discarded owing to the fact that all alleys are covered with five or six coats of shellac, the grain of the wood being filled and covered to such an extent that it would have no bearing whatever upon the course the ball takes.

Overcoming Different Conditions

Alley finishes found in the different establishments vary to such an extent that this causes bowlers who think seriously about their game, to change their deliveries quite radically at times.

If the alley provides either a perfectly dry surface, this sort of a finish enables a hook bowler to bring about a more pronounced hook than is the case when the alley bed is either perfectly clean or highly polished. Should the alley man use either too much oil in his polish and fail to remove this during the polishing process or spray a thin film of oil on the alleys after polishing, this would prevent the ball from grabbing the alley surface to any great

degree, and result in cutting down the hook.

Bowlers who take their game seriously take all of the foregoing into consideration and govern themselves accordingly.

They first determine as well as possible just what the conditions are and then apply themselves to overcoming certain of these conditions or take advantage of them, all depending upon their own peculiar or particular type of delivery.

Change Your Spot

Supposing you ordinarily start your ball at a point approximately eight inches to the left of the right-hand corner of the alley and you find, when starting on an alley upon which you have not previously bowled, that your ball continually strikes either too full on the head pin or crosses the head pin, despite the fact that you go to the foul line naturally, use the proper back swing, lay your ball correctly, that your timing is perfect, and at the same approximate angle used by yourself generally.

A smart bowler corrects this without any delay by moving his starting point to the left still farther and continues his natural delivery, or points his ball more to the right than on his first delivery. Should this fail to bring about the proper result, he speeds up his ball a trifle.

If, after he locates the approximately correct spot upon which to start his ball and the ball enters the pocket and he leaves either the four, five or ten, or the eight and ten, he must then make a careful check-up to determine whether the ball entered the pocket at the correct angle and also at the proper speed—angles and speed, in such more or less baffling instances, having a great deal to do with bringing about the desired results.

It must be remembered at all times that despite the fact that the ball, the alleys and the pins have a great deal to do with bowling results, the only place where the bowler himself must be in full possession of all his instinctive bowling faculties is on the approach.

Here he lifts his ball off the ball return. Here he grips the ball and takes his stance. Here he begins, takes the necessary stride, and ends his delivery. All the bowler has to do in this game of bowling is then completed. Once the ball leaves his hand, his score is in the hands of

fate, more or less. Therefore, emphasis should be laid upon the care with which these respective phases of the game are treated.

Subject of Spare Bowling

SPARE bowling plays a very important part in scoring well, for when a bowler fails to strike, he must be able to make his spares consistently in order to fill as many frames as possible and if a bowler expects to make spares he must adopt a system that fits his particular type of delivery. Unless a man first studies the tenpin set-up and analyzes his spare leaves and then bowls at them from the proper angle, he will unquestionably miss many a spare that he would make if he had applied thought to his spare bowling.

It might be best to begin this series on spare bowling by calling attention to a fundamental rule which is used by all who maintain respectable averages. This rule can best be stated as follows: When a spare leave is left up on the left-hand side of the alley, the bowler starts his ball from the right-hand side; when a spare is left up on the right-hand side of the alley, the bowler starts his ball to the left of the spot from which he starts his strike ball. How far he goes to the left depends entirely upon the leave and his type of delivery.

In the accompanying charts no effort is made to show definitely where each type of delivery must be started, because at best these instructions can only be general for every individual uses a delivery which varies somewhat from that used by every other bowler. Then, too, the peculiarities of each alley must be taken into consideration.

A straight ball is naturally easier to control than a ball which either hooks or curves and therefore proficient straight ball bowlers generally make spares more consistently than do those who hook or curve a ball.

Must Consider Deflection

When bowling spares, the bowler must in all instances take deflection into consideration when rolling a spare that contains more than one pin. The deflection which comes about when the ball contacts the pins depends upon the speed and angle at which the pins are contacted and the weight of the pins being

bowled at. Heavier pins naturally bring about a greater amount of deflection than do light weight pins.

A greater number of misses occur when bowling at pins in the 4-5-6 and the 7-8-9-10 rows than when bowling at either the 1, 2 or 3 pins because the bowler fails to realize that when rolling at pins in the rear rows the ball travels a greater distance and therefore when bowling a hook or a curve at them, such a ball must be pointed a trifle more to the right in order to prevent the ball from passing to the left side of a pin.

In preparing these charts, we show comparatively the same curve at the finish of all hook ball deliveries, but we do not intend to infer that all hooks rolled prescribe the same sort of an arc as shown. As an illustration, if the hook ball shown in chart 12 broke sharply to the left it would probably result in a "cherry pick."

In diagram No. 1 we show the No. 2 pin leave which should be bowled at with comparatively the same ball and from the same spot as the strike ball. The ball must, however, be pointed differently than when bowling at the 1-3 pocket.

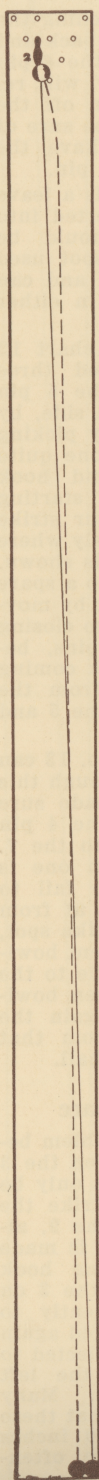
In illustration No. 2 we show the straight ball delivery being started from the strike spot, but exaggerate the distance to which the hook bowlers move off the strike spot in order to emphasize the necessity for moving to the left because the 3 pin is to the right of the center of the set-up.

The No. 4 pin shown in chart No. 3 is bowled at from about the same spot from which one bowls at the 2 pin, but again, we must caution the bowler to change his angle a trifle to the left.

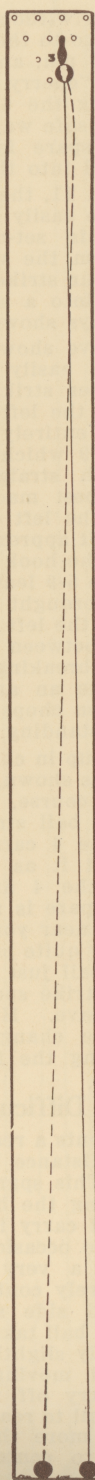
In chart No. 4 we show the 5 pin leave which is bowled at from comparatively the same spot from which one rolls his strike ball, although one bowling a real hook ball would be wise to go to the left a trifle in starting his ball.

In bowling at the 6 pin leave as shown in chart No. 5, the straight ball bowler should move a trifle to the left off his strike spot and the hook ball bowler should go to near the center of the alley or beyond the center to the left if he bowls a quick-breaking hook or what is called a "looper" or curve ball.

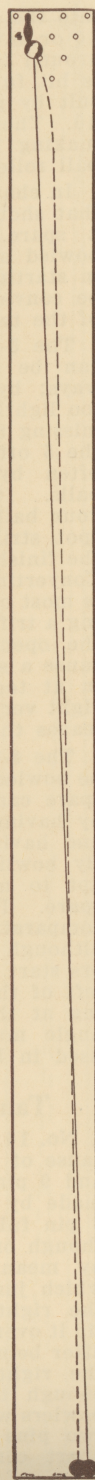
The No. 7 pin leave shown in chart 6 is probably missed many times because of over-confidence and also because it happens to be in the



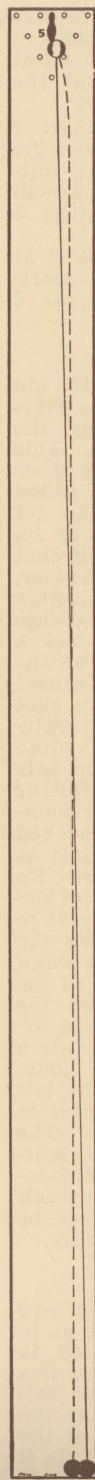
No. 1



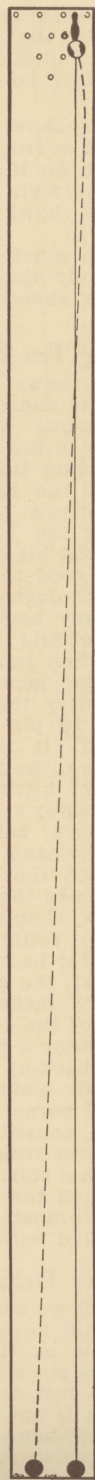
No. 2



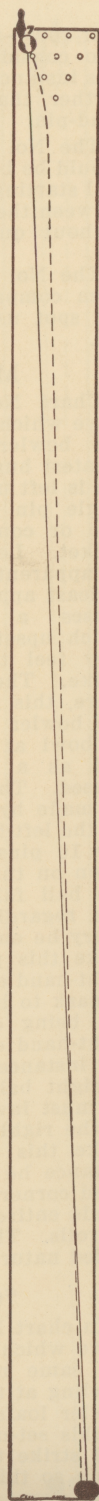
No. 3



No. 4



No. 5



No. 6

rear row—the bowler failing to take into consideration the fact that in this instance the ball must roll 3 feet further than when bowling at the head-pin.

The No. 8 pin shown in chart 7 should be bowled at from your strike ball starting spot, for if the ball rolls between the 1 and 3 pin spots, it will without question bowl over the 8 pin.

The No. 9 pin must be rolled at from comparatively the same starting spot used in shooting at the 6 pin.

Making Ten Pin

Chart No. 9 shows the 10 pin leave which in the mind of the average bowler presents probably the greatest bugaboo in the game. This pin is left up oftener than any other single pin when the ball is rolled into or comparatively near the 1-3 pocket. Leaving the 10 pin up on an apparently good hit or a hit that at least appears good to the bowler, causes a psychological reaction which upsets many bowlers because they feel they should have had a strike. Then, when bowling at the spare, this reaction generally causes the bowler to hurry the spare shot or bowl at the 10 pin unnaturally and as a result, it is too often missed. Then, too, the pin can only be made by either hitting it full or on the left-hand side; very few number 10 pins, indeed, being knocked down on the right-hand side just as the ball falls into the gutter. No one, regardless as to the type of delivery he employs, should attempt to make this pin by rolling down the right-hand edge, for he has too small a mark to bowl at, the center of the pin being only 3 inches from the right-hand edge of the alley. In every instance whether a man bowls a straight ball, a back-up or a hook, he must invariably move to the left of the right-hand corner in order to make this spare consistently. The distance he chooses from the right-hand corner for his starting spot depends entirely upon the type of ball he rolls. The ball must, however, be rolled naturally and not hurriedly.

"Cherry Picks"

In chart No. 10 we show the 6-10 leave which should be bowled at in the same manner as that used in bowling at the 10 pin alone, for if a bowler loafs and just drifts his ball at this set-up, he is apt to have the ball strike the left-hand side of the 6 pin so thin so as to just topple it

into the gutter without touching the 10 or have it go to the kickback and around the 10 pin, and if the 6 pin is hit full, a "cherry pick" will result by picking the 6 clean off the 10. The only safe way to be sure of making this spare is to have the ball rolled full into the 10 pin.

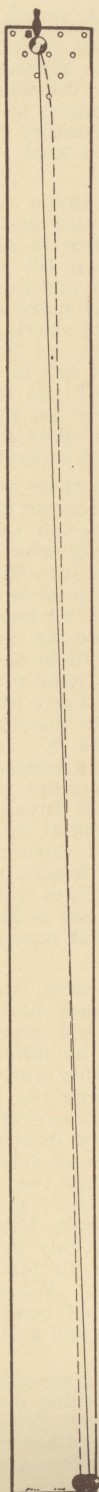
In chart No. 11, the 5-8 is a leave that should be easily converted into a spare. This set-up should be bowled at from the very spot used in starting your strike ball and can be converted into a spare in either of the two ways shown.

The 5-9 leave shown in chart 12 can be quite easily missed three ways; by either striking the 5 pin too lightly on the left-hand side, by missing the 5 entirely or by picking the 5 off the 9 which is done quite often by both straight and hook balls. It is best made by starting your ball to the left of your strike spot, striking it approximately where the finish of the hook ball is shown. Converting the 5-9 leave into a spare is most often brought about by moving a trifle to the left and so closing the opening between the pins, because a sharp-breaking hook coming in at too wide an angle from the right very often chops off the 5 and leaves the 9 standing.

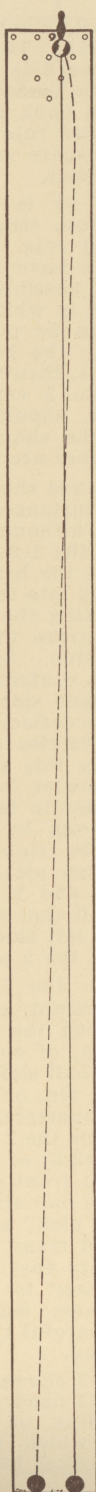
The 4-7 set-up in chart No. 13 can be bowled at as shown, although this spare can, of course, be made sure by having the ball strike the 4 pin and having the 4 carry into the 7. By bowling at it as shown one is apt to miss the 4 and so fail to spare. This spare is rolled at from comparatively near your strike spot, although many quite proficient bowlers start the ball just a trifle to the left of their strike spot when bowling at this leave. Here again the angle must be changed from that used in bowling the first ball.

Tandem Difficult Spare

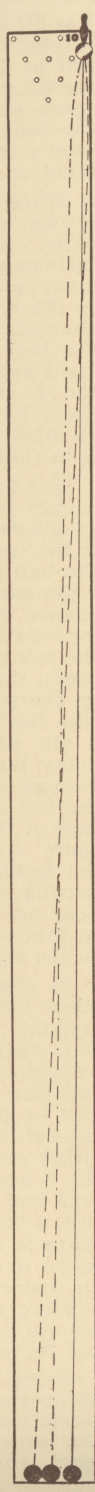
No. 14 presents a real problem because of the distance between the 3 and 9 pins. This spare can only be made by having the ball strike the 3 pin full and carry into the 9, although on rare occasions it is made by means of a very strong hook which just barely contacts the 3 on the right-hand side sufficiently to tip it over, the ball taking hold again after being only slightly deflected to the right and moving to the left enough to carry off the 9. Many bowlers who fail to realize that these two pins are more than 20 inches apart center to center, are often-



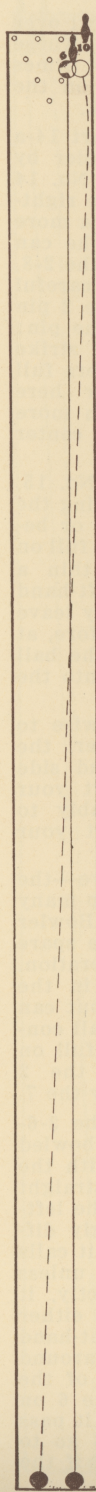
No. 7



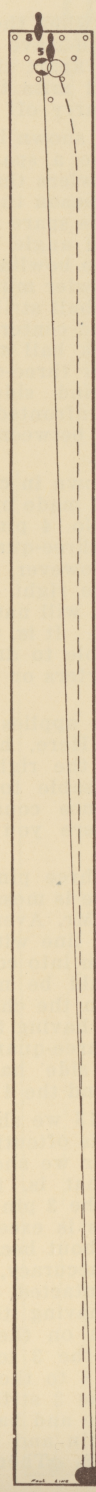
No. 8



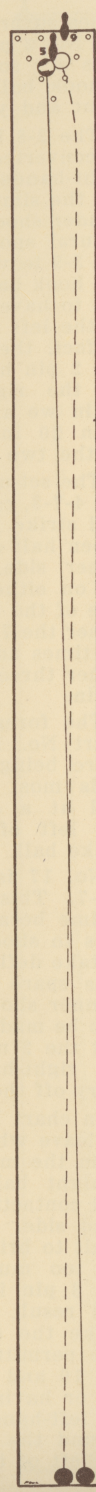
No. 9



No. 10



No. 11



No. 12

times surprised when they bowl over the No. 3 pin and leave the 9. These pins are so far apart that at times a hook ball will miss the 3 on the right and yet carry off the 9.

The 2-8 leave shown in chart 14-a is converted into a spare easier by right-handed bowlers than is No. 14 for the simple reason that the right-hander shoots his spare from a more natural spot and angle than he can the 3-9 leave. In bowling at the 2-8, the hook ball bowler must be careful not to have his ball strike the 2 pin to the left of the center of the pin; in fact, the hook ball should strike the 2 pin half or three-quarters full on the right-hand side, for here again we are confronted with more than 20 inches between the center of the two pins.

The set-up shown in chart No. 15, the 4-7-8, can be made by having the ball strike the No. 4 pin full or between half and three-quarters full on either side. However, too thin a hit on either the right or left-hand side of the 4 pin will naturally leave either the 7 or 8. It is, therefore, at all times advisable to drive the ball either three-quarters or full into the 4 pin.

The foregoing applies likewise to chart No. 16. Here, however, the spare being on the right-hand side it is most advisable to start your ball at a distance considerably to the left of where you start your strike ball.

No. 17 is a three pin leave—the 2-4-7. This leave is messed-up many a time because Mr. Average Bowler fails to shoot in line with the spare or take deflection into consideration. This spare should be made in the manner shown in the chart, but can also be made by having the ball contact the 2 pin three-quarters full on the right-hand side having the 2 carry off the 4 and the 4 carry the 7.

In chart No. 18 we show the 3-6-10 leave which is oftentimes bowled at in the manner we show with the straight ball, that is, the straight ball contacting the 3 pin on the left-hand side. This is exceedingly difficult to bring about because it calls for too much accuracy, for unless the 3 pin is contacted correctly, it will result in having the 3 either strike the 6 pin on the right-hand side permitting the 3 to go around the 10 and the 6 to the left of the 10, or having the 3 strike the 6 on the left-hand side and having it pass around the 10 pin and the 3 go to the left of the 10. Then too, if the

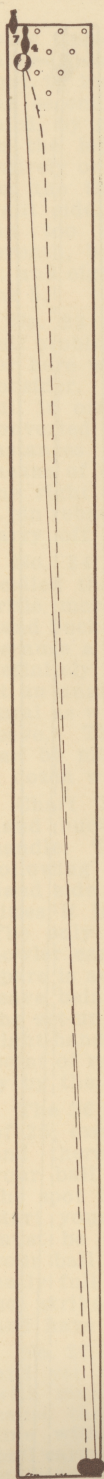
3 is hit too full, it is picked off clean leaving the 6-10. The safest way to roll at this spare is in the manner shown with the hook ball. Whether using either a hook or straight ball the fundamental rule of shooting in line with the spare must be kept in mind at all times.

Spare No. 19 is best made as shown with both straight and hook balls. A good rule to follow in all instances is to have the ball hit as many pins as possible. In addition to the manner in which this spare is charted, it can be made by having the ball strike the head-pin on the right-hand side, throwing it full into the 2 and the 2 carry off the 8. This, however, should never be attempted for the chances of making it in that manner are remote at best.

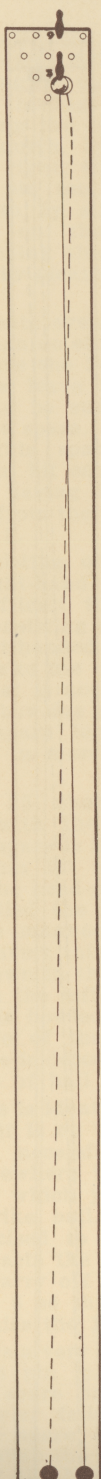
The 1-3-9 leave shown in chart 20 should in all instances be bowled at as illustrated, although here too (as is the case in the 1-2-8 leave, where the ball drives the head-pin into the 2 pin and the 2 into the 8) there is a chance of making the spare by having the ball strike the head-pin on the left-hand side. As shown in the chart, the ball contacts the head-pin on the right-hand side and if not too full, the ball is deflected into the No. 3 pin which carries off the 9. In many instances this spare is missed because the bowler fails to move to the left in order to take full advantage of the set-up. In bowling at this spare from the right-hand corner, the bowler often picks the head-pin leaving the 3 and 9 or strikes the head-pin so full that the 3 pin is hit so thin on the left side that it passes to the right of the 9 pin.

In chart 21, the 2-4-5 leave, we show both straight and hook balls striking between the 2 and 5 pins. This spare can, of course, be made by having the ball strike either quite full into the 2 pin, or crossing the 2 half or three-quarters. If, however, the ball contacts the 2 pin too lightly either on the right or left-hand side, the 2 passes in front of either the 4 or 5 and if the ball strikes the 2 pin full, a "cherry pick" will result. This spare is missed many times only because it appears easy when, in fact, no spare is easy to make. When bowling at spares, many good bowlers are more careful than when rolling for a strike.

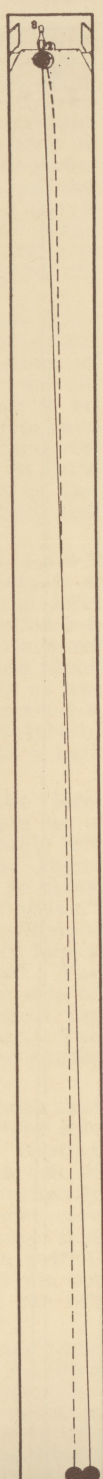
Chart No. 22 shows the same set-up on the right hand side which necessitates moving to the left from the spot on which you ordinarily start your strike ball. Like the



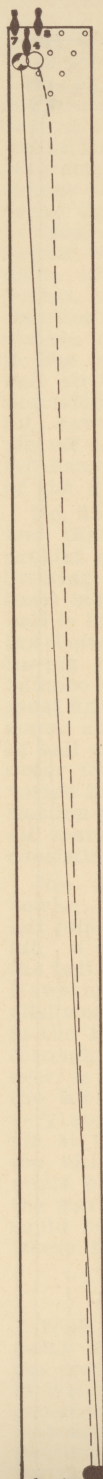
No. 13



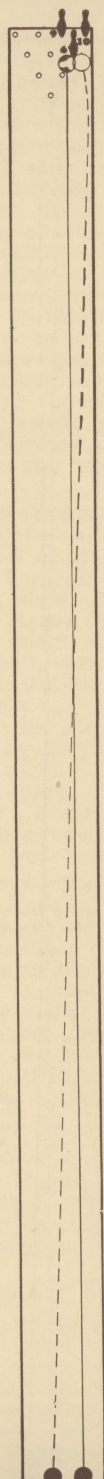
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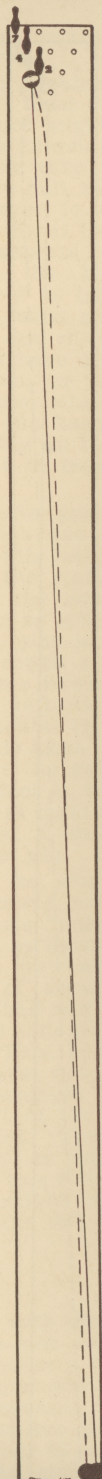
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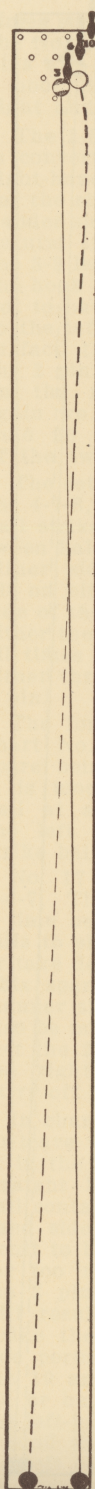
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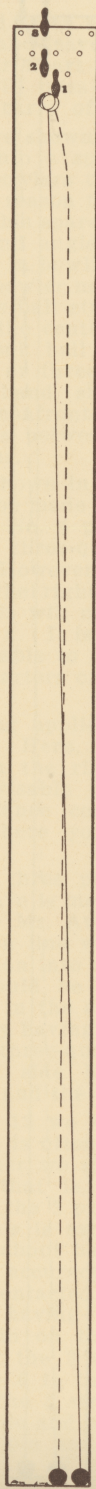
No. 16



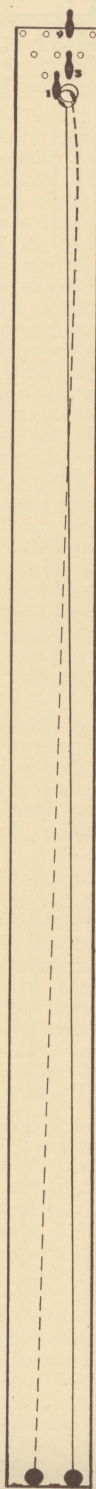
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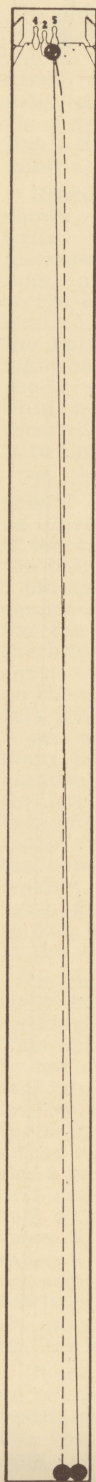
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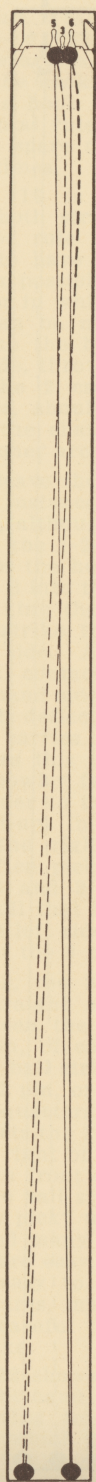
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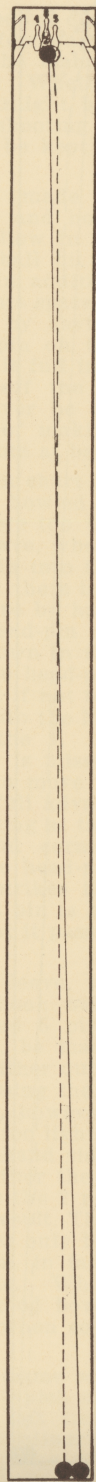
No. 20



No. 21



No. 22



No. 23

spare leave shown in chart 21, it can be missed eight different ways; first, by knocking off the 5 pin only; the second, by hitting only the 6; third, by missing the spare entirely on the left; fourth, by missing it entirely on the right; fifth, by striking the three pin too thin on the right side; sixth by striking the 3 pin too thin on the left side; seventh, by picking the 3-5 off the 6; and eighth, by picking the 3-6 off the 5.

No. 23 presents even a more difficult problem than do either 21 or 22, for here we have the 2-8 tandem to consider. This leave must be hit full in order to be sure that it be converted into a spare. Only in rare instances is this spare made by means of a thin hit coming in from the right and having the 2 or the 4 pin rebound from the kickback and carry off the 8.

No. 24 consisting of the 3-5-6-9 (called the right-hand bucket) is a trifle more difficult than the left-hand bucket consisting of the 2-4-5-8 because a right-handed bowler must definitely move to the left and shoot at an angle that is not quite as natural as when bowling at the 2-4-5-8 leave. This spare leave naturally can be missed in more than a half a dozen ways.

Chart No. 25 shows the left-hand bucket with the 7 pin as a handle. This spare is invariably left following a thin hit on the right-hand side of the head-pin. In many cities it is called the "half-strike." The only sure manner in which a bowler can convert this leave into a spare is as shown in the chart. The leave being on the left-hand side of the set-up, it is bowled at from the right-hand side of the alley. The point of release is determined entirely by the type of ball used.

The 26 leave is identical with that of 25, except it is on the right side and therefore necessitates starting your ball somewhere to the left of the spot from which you ordinarily start your strike ball. Great care must be exercised to be sure that your ball contacts the 3 pin sufficiently full to carry off the 9 pin yet not strike the 6 so thin on the left and have it miss the 10.

No. 27 shows a very common leave and yet the 4 pin is left standing with many a spare ball simply because the bowler fails to shoot in line with the spare and have the ball carry through the 3 pins. Simply striking either the No. 1 pin or the

1 and 2 does not assure having this leave converted into a spare.

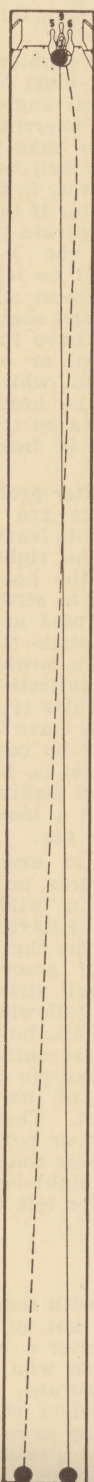
No. 28 presents a greater problem than does No. 27 because it must be bowled at from an unnatural angle. Unless the bowler possesses unerring accuracy, only then may he take a chance of putting the spare ball between the 1-3. This, however, is to be discouraged at all times for if the bowler were sufficiently accurate to place his strike ball in the 1-3 pocket, this leave would not be left standing. It is, therefore, most advisable to move to the left and shoot in line with the spare and have the ball strike either as shown, or on the left-half of the head-pin, which hit, however, might pick the head-pin off clean or strike it thin on the left-hand side and drive it in front of the 3 pin.

No. 29 presents a far greater problem than 27 because there are a greater number of pins in this leave. Striking the head-pin on the right-hand side as shown with the hook ball is by no means as safe as striking between the 1 and 2 pins and having the ball carry through the balance of the set-up. Each bowler must know just how much deflection comes about with his particular type of ball when bowling at this leave in order to be certain that it be converted into a spare. The fact is, deflection plays a great part in making all spares when bowling at a leave consisting of more than one pin.

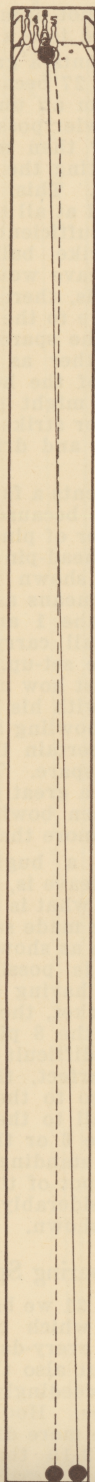
No. 30 is a bugbear to every bowler. This leave is, of course, only left following what is called a "wild" hit. It can be made safest by having the ball strike as shown in the chart. However, it is possible of accomplishment by having the ball strike in the 1-3 pocket, the ball following through into the 8 pin. This, however, is most difficult because unless the hit is perfect, the head-pin is very apt to go to the left of the 8 pin or the ball to the right. Then, too, either the 6 or the 10, or both, might be left standing. In this chart, the starting spot of the straight ball could be considerably to the left of where it is shown.

Sparing Splits

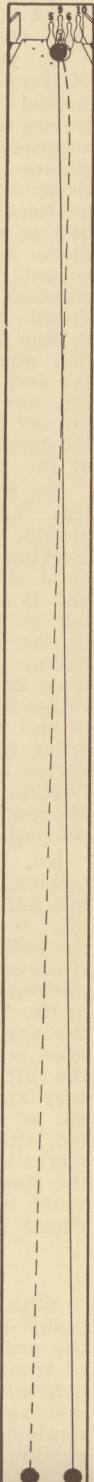
With chart 31 we begin with those pesky splits which cause not only the ordinary every-day bowler a lot of trouble, but also the man who is generally exceedingly accurate in making spares. Hook bowlers particularly have more difficulty in converting the 3-10 than do straight



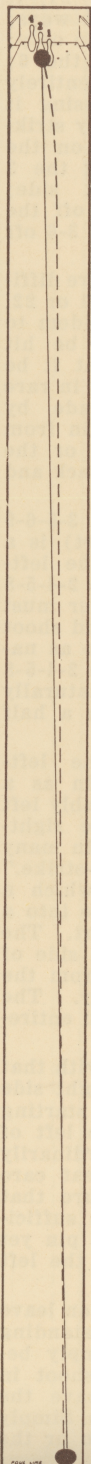
No. 24



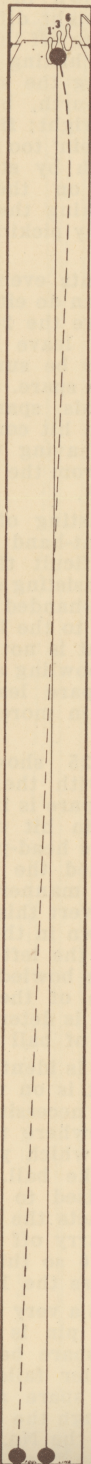
No. 25



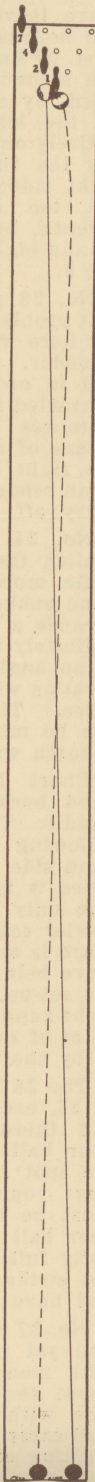
No. 26



No. 27



No. 28



No. 29

ball bowlers; especially so when bowling against the lighter weight pins, for here deflection definitely comes into play to such a degree as to be discernible. Much discussion takes place continually as to the proper manner of making the 3-10 split. In the opinion of the old-timers, the split should be made by having the ball strike the 3 pin on the right-hand side and deflect into the 10 pin. By bowling at it in this manner, the 3 pin can be missed on either side or it can be hit too full or contacted too thin on either side. The same can be said when bowling at the left-hand side of the 3 pin. In summing it up, it can be missed four ways regardless as to whether one shoots at either the right or the left-hand side of the 3 pin. However, by attempting to fit the ball between the 3 and 10, one is practically always assured of at least one of the two pins and therefore it seems advisable to shoot between them.

The above applies likewise to chart 32, but here instead of shooting from the left-hand side of the alley, the right-handed bowler is far more certain of making the 2-7 than he is the 3-10. Here also the type of ball one rolls must be first considered. The 2-7 is to be rolled at from somewhere to the right of the center of the alley.

In chart No. 33 we show the 5-7 split which is left following a thin pocket hit which generally is due to the ball fading. The only way to convert this leave into a spare is to have the ball strike the 5 pin on the right-hand side and deflect into the 7 pin. The hook ball will come in at the best angle by starting a little to the right of the center of the alley and the straight ball as shown—by being started at or very near the starting spot for the strike ball.

The above likewise applies to the 5-10 split shown in chart 34, except, of course, that the 5 pin must be hit on the left side. The angle at which both hook and straight balls must come in contact with the 5 pin, no matter from what position on the alley they are started, is 120 degrees. If too thin, the 5 slides in front of the 10 and if too full it goes behind the 10 pin. The right-handed bowler should shoot at this spare and also the 5-7 split from about the same position he lets go his strike ball.

In chart No. 35 we see the 4-5 split which calls for extreme accuracy if this leave is to be converted into a spare, for the ball must

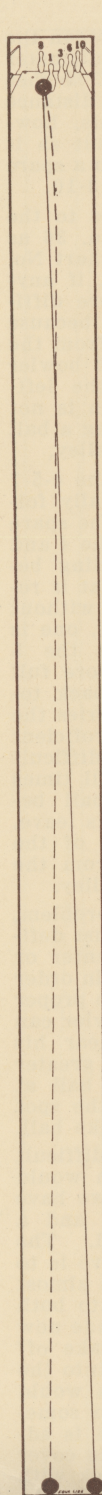
be placed almost exactly between the two pins inasmuch as the diameter of the ball is only 1.3687 inches greater than the narrowest distance between the two pins. This, however, is not quite as difficult as it appears and is converted into a spare probably as often as is the 3-10.

All the above also applies to the 5-6 leave shown in chart No. 36 as well as the 9-10 shown in chart No. 37, with the exception that, if anything, the 9-10 leave is more difficult to convert into a spare because it is not only further away from the bowler, but the right-handed bowler must start his ball from the left-hand side of the alley which is not as natural to him as is rolling a ball from the right side of the alley.

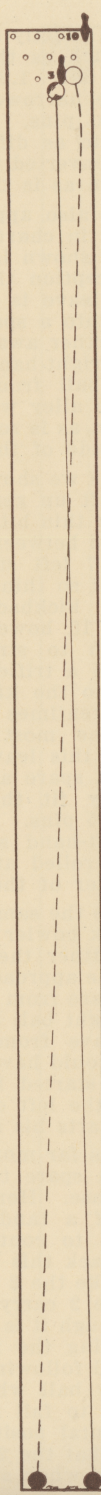
In chart No. 38 we show the 4-5-7 split which is left up generally following a weak or thin hit. The spare ball is often fitted between the 4 and 5 pin with the 7 left standing because the 4 is hit so thin that it rebounds off the kickback without touching the 7. If, however, one is fortunate enough to strike the 5 lightly and the 4 a trifle more full so that it goes to the kickback toward the 7, it oftentimes carries the 7 off. Even the most proficient bowler will find this leave difficult to convert into a spare at all times although he may fit the ball between the 4 and 5 pins. This leave, being on the left-hand side of the alley, should be rolled at from the right of the center of the alley.

No. 39 presents the same problem, but here the hook bowler must definitely move to either the center or the left half of the approach in order to bowl at the spare from the proper angle. The straight ball bowler can bowl at this leave from near his strike spot, but would have a greater advantage if he started his ball at least a trifle to the left of the spot from which he starts his strike ball.

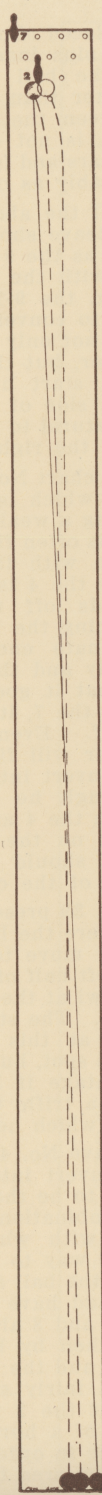
Leave No. 40 is far more difficult to convert into a spare than would seem to be the case. Here we have a combination of a tandem and a split with which to contend. The safest way to attack this leave is to have the ball strike the 2 pin almost full and have the 2 carry into both the 7 and 8 although it is made now and then by having the 2 take off the 8 and the ball following into the 7. A fairly slow ball which would permit the 2 pin to fall into somewhat of a horizontal position is advisable in order that the 2 pin cover a wider area than when struck with



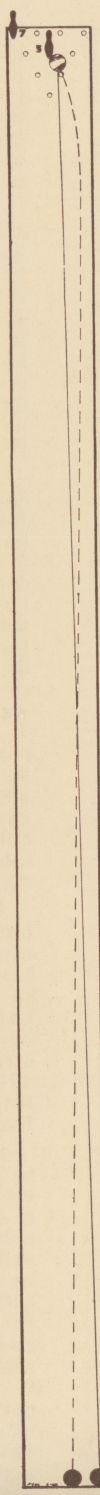
No. 30



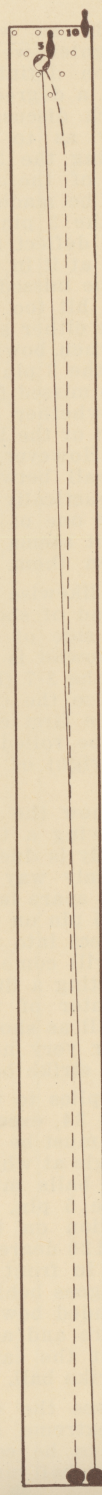
No. 31



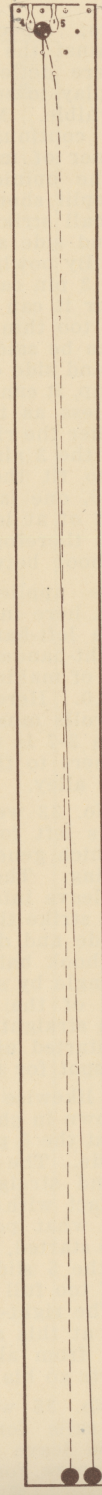
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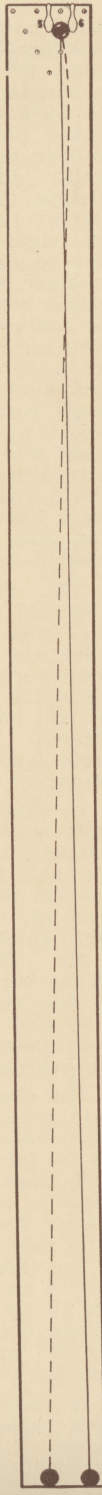
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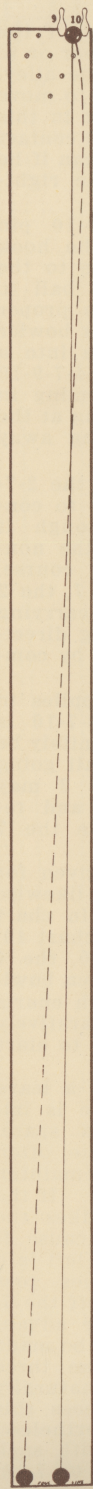
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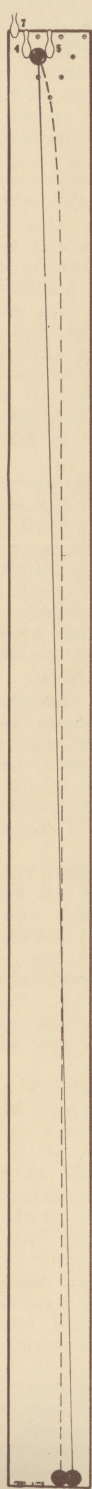
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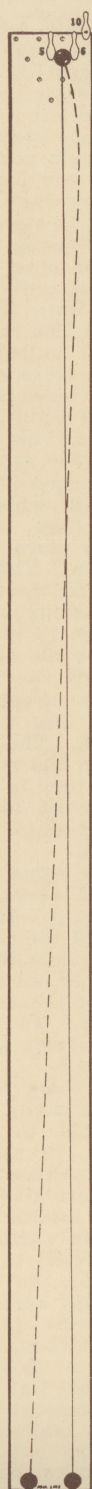
No. 36



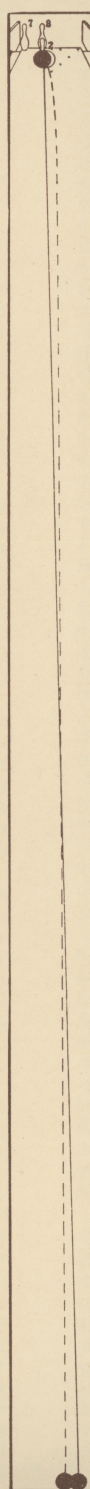
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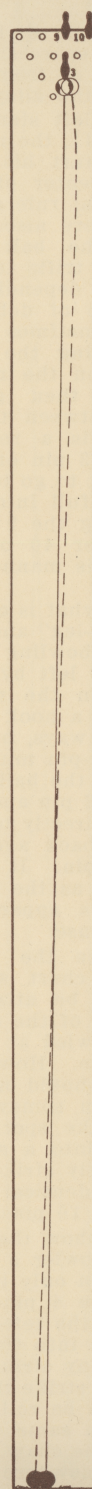
No. 38



No. 39



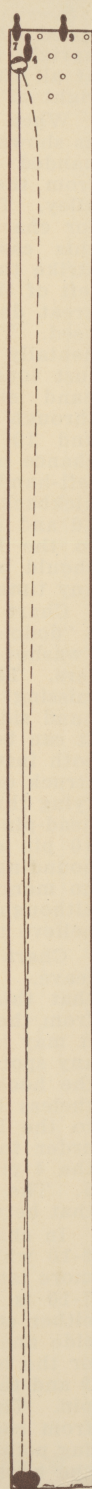
No. 40



No. 41



No. 42



No. 43

speed which would send it off in an upright position. This spare should at all times be bowled at from the right of the center of the alley.

When the 3-9-10 is left standing as shown on chart No. 41, the right-handed bowler must start his ball from the left of the center of the alley. The same general rule given for chart 40 applies here also. In this case, however, the ball can strike the 3 pin just a trifle to the left of the center—this depending a great deal on the type of delivery used. This spare is sometimes accidentally made by having the ball just touch the 3 pin on the right-hand side, the ball then going through and fitting between the 9 and 10 pins. There is a remote chance of striking the 3 pin on the left-hand side causing it to go to the kickback and rebound full into the 10 and the 10 knocking the 9 over to the left, but neither 40 or 41 should be played in this manner at any time.

Chart No. 42 shows what is called a "dodo split," the "dog-leg" and the "washout" in various bowling centers. This is generally left by just missing the headpin on the right-hand side when rolling a hook ball. It can be made in two ways, but in both instances the head-pin must be struck on the left side, the ball carrying through into the 2 pin and the head-pin going either directly to the 10 pin or to the kickback and rebounding onto the 10 pin. It is in no manner as difficult as the 5-10, although many bowlers apparently believe this to be the case.

Chart No. 43 shows the 4-7-9 leave. Although the chart shows that this leave should be attacked from the left-hand side of the alley, it may in reality be bowled at from any spot at the foul line. However, the hook ball bowler should nevertheless bowl at it from somewhere to the left of the strike spot. In order to convert this into a spare, the 4 pin must definitely strike the 9. The angle here is identical with that between the 5 and 10 pins.

In chart No. 44 we show the 4-7-9-10 which gives the bowler a little more latitude than when only the 4-7-10 is left because the 4 pin may either strike the 9 on the left-hand side and have it topple into the 10, or the base of the 4 may strike the 9 and the neck or head strike the 10 pin. This spare should be rolled at from comparatively the same starting point as shown in the chart, i. e., the hook ball from somewhere near

or to the left of the center of the alley and the straight ball near or to the right of the center of the alley. We advise the hook bowlers to move to the left of the strike spot in this instance because his ball will contact the 4 pin at a better angle than if he were bowling from near the right-hand corner of the alley.

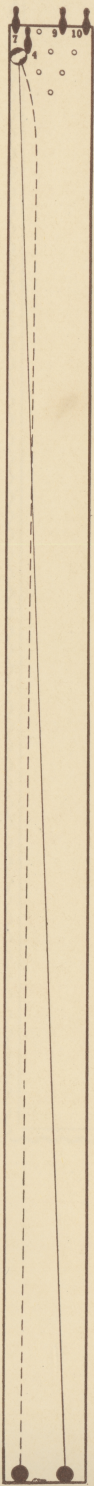
In bowling at the 6-7-8-10 pin leave shown in chart 45, the hook bowler must definitely move to the left in order to permit his ball to come into the 6 pin at the proper angle. The right-handed hook bowler is apt to convert this leave into a spare more often than the 4-7-9-10 leave because his ball is coming in to the 6 pin, while in shooting at the 4-7-9-10 his ball is traveling away from the 4 pin.

In chart No. 46 we show the 2-7-10 split which is far easier to convert than the 4-7-10 although it seems more spectacular to the non-bowler. The ball must, of course, be fitted between the 2 and 7, the 2 pin having two chances of carrying off the 10 pin—one by going directly into the 10 and the other by coming off the kickback.

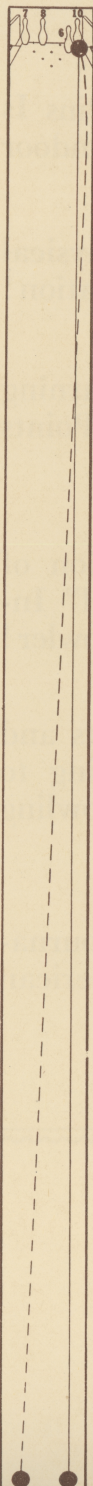
The foregoing likewise applies to chart No. 47 where the 3-7-10 is shown. The 3 pin must definitely be hit on the right side, the ball going into the 10 pin while the 3 may either go to the kickback and rebound onto the 7 or strike the 7 direct.

The same general rules given for charts 43-44 and 45 apply likewise to the 4-7-10 leave shown in chart 48 and the 6-7-10 shown in chart 49. When bowling at the 4-7-10, the 4 must be cut thinner than when bowling at the 4-7-9-10. In both charts 48 and 49 we show comparatively the correct spot from which to start the ball.

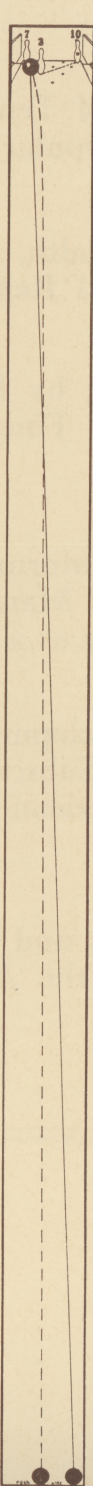
In chart No. 50 we show a leave which many bowlers believe is impossible to convert into a spare, when, in reality, it is quite often made although the three remaining pins are all in the same row. If the ball, especially a hook, strikes the 10 pin sufficiently full to cause it (the ball) to rebound to the left into the 9, the 9 pin oftentimes goes straight across and carries off the 7. Here the hook ball has the advantage although the spare can be made with a straight ball. These three pins are left so seldom that naturally the number of times one sees this spare made are small, nevertheless, it must not be classified with such leaves as the 4-6, 7-9, 8-10, or 7-10.



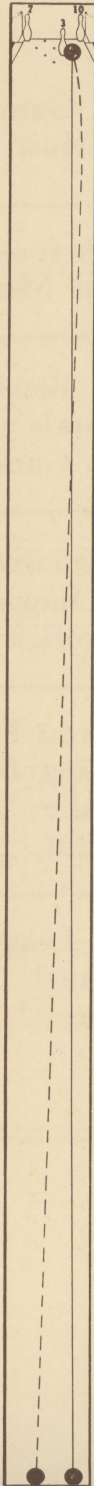
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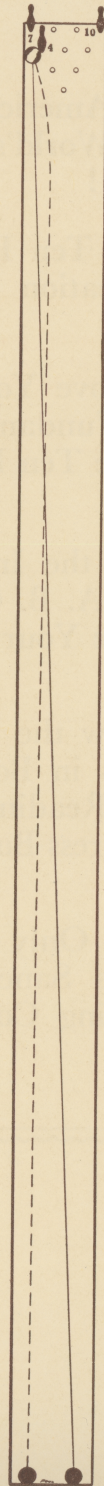
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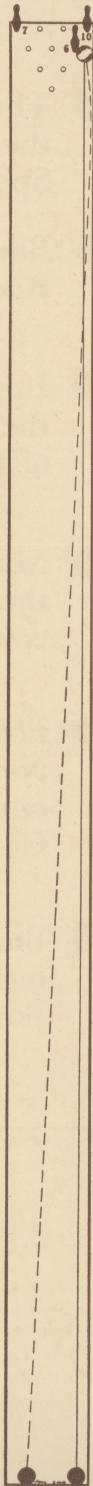
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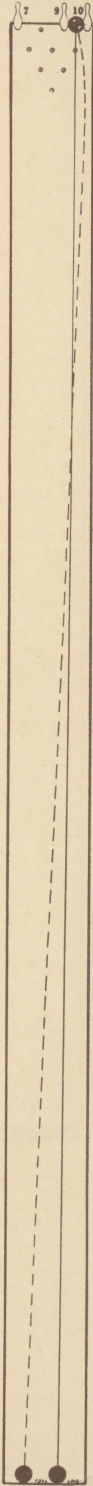
No. 47



No. 48



No. 49



No. 50

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